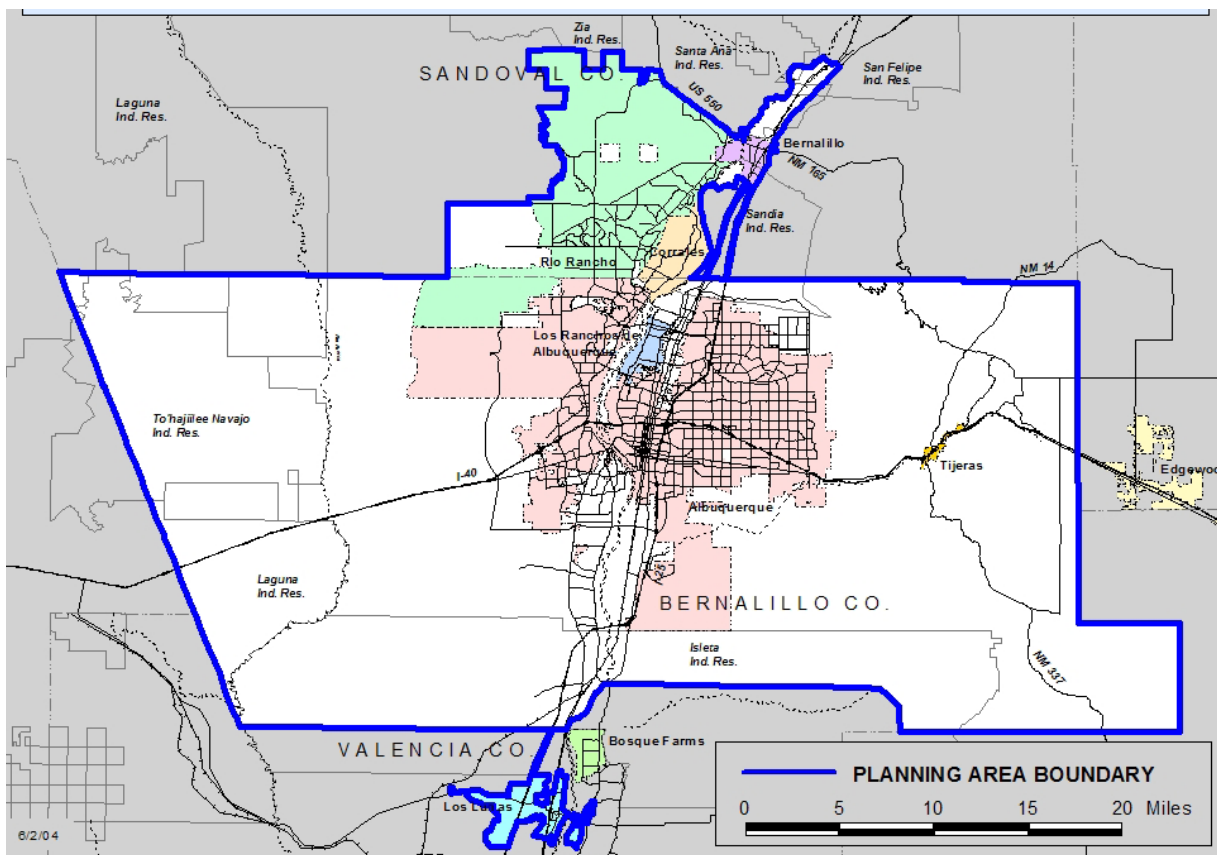




Mid-Region Council of Governments of New Mexico

2030 Metropolitan Transportation Plan (MTP) For the Albuquerque Metropolitan Planning Area

Overview and Status of Project March 15, 2006



Map of the Albuquerque Metropolitan Planning Area (AMPA), 2004

Mid-Region Council of Governments of New Mexico

2030 Metropolitan Transportation Plan (MTP)
Overview and Status of Project

A Report of the Transportation Program Task Group (TPTG)

March 15, 2006

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I. Introduction

Overview of the MTP Development Process

This report serves as a guide for the development of the 2030 MTP. It will be updated following each TPTG meeting to capture issues, refine tasks and schedules, and provide information for progress of the MTP until it is completed in the Fall of 2006.

For questions or comments, please contact Mark Sprick, AICP, Transportation Planning Manager, at 505-724-3633, or by email at msprick@mrcog-nm.gov.

The general timeline for developing the 2030 MTP is:

- January 3 Kickoff meeting for general plan development; initial land use estimate map (TPTG questions / issues:
 - Population of eastern Bernalillo County?
 - Use 2015 as an interim year, for “existing+committed” network?
 - Update website with previous drafts
 - How do we plan for Safe Routes to School?
 - Place downloadable maps on web; have maps on web that can be viewed/zoomed/panned in detail)
- January 31 Final Agenda and Actions:
 - Confirm 2004 Base Year project information; refine land use map and socio-economic data; update of projects from 2025 MTP
 - Review/Complete 2004 Base Year Data
 - Brief on Pedestrian Index from WABAG
 - Updated 2030 Socioeconomic and land use projections, including subareas of metro region
 - Discuss integration of FAABS into MTP process and products
 - Initial review of 2015 and 2025 roadway projects list from 2025 MTP
 - Next Steps:
 - Financial estimates
 - Anticipated Revenues
 - Project Unit Cost Estimates
 - Performance analyses
 - Accessibility for Regional Travel Markets (travel times)
 - High Crash Rates
 - Severe Congestion
 - Mobile Source Emissions for Ozone Precursors (NOx and VOC)
 - Critical Regional Corridors / Subareas (from CMS)
 - Initial 2015 Existing + Committed networks
- February 28 Final Agenda and Actions:
 - Final Review of 2004 Base Year roadway network

- Initial Review of 2015 “Existing+Committed” roadway projects
- Initial Review of Performance Measures
 - Congested Peak Hour Lane Miles (by Level of Service)
 - 2004 Lanes Miles by Functional Classification
 - Home-based Work Person Auto Trips
 - Total Person Transit Trips (Daily)
 - Vehicle Miles of Travel (Daily and Peak Hour)
 - Vehicle Hours of Travel (Daily and Peak Hour)
 - Peak Hour Vehicle Hours of Delay
 - Daily Volumes
- Discuss Draft Goals

Goals defined: *generalized statements which broadly relate from the physical environment to values; state the desires and aspirations for the transportation system as well as for the people and communities served by the transportation system.*

Objectives defined: *specific, measurable statements related to the attainment of goals.*

 - Maintain & Preserve the Existing Transportation Infrastructure
 - Provide the Safest Travel Possible for All Modes
 - Provide Choices in Access and Mobility for People and Goods
 - **Access defined:** *a means of approaching, entering, exiting, or making use of a place or facility*
 - **Mobility defined:** *the ability to move or be moved from place to place.*
 - Manage the Existing Systems to Maximize the Return on our Investments
 - Provide Transportation that Supports Local Land Use Planning and Community Goals
 - Respect and Preserve our Environment
 - Provide Transportation Security
 - Suggestions for Other Goals:
 - Improve & Expand Transportation Systems to meet future demand
 - Reduce dependence on Interstate Highways for Local Trips
 - Expand roadway capacity
 - Minimize delay
- Discuss concepts for 2030 Scenarios:
 - Loop Freeways
 - Tunnel through Sandia/Manzano Mountains
 - Managed Lanes
 - Ramp metering on freeways
 - Northwest Loop in Sandoval & Bernalillo Counties
 - New Bridges over Rio Grande
 - Fixed Guideway and Bus Rapid Transit

- Intelligent Transportation System (ITS) improvements
 - More grade-separated bridges over I-40 and I-25
 - New radial freeways and parkways
 - Improved grid street network on westside of Albuquerque
- Discuss 2nd Round of Public Outreach
- Next steps:
 - Complete 2015 Roadway Network
 - Continue 2030 Scenario development
 - Begin financial estimates
- March 28 Draft Agenda:
 - Continue development of draft Goals & Objectives
 - Review updated 2004 ITS Projects
 - Review updated 2004 Bike/Ped Facilities
 - Complete 2015 roadway network
 - Produce 2015 SE on 2015 network
 - Produce first drafts of 2030 Horizon Year networks
 - Review Performance Measures
 - Review conduct of second round of public involvement
- April 25 Complete financial estimates and socio-economic data sets; continue development and refinement of networks; approve mission/goals/objectives/policies
- May 30 Complete networks and project lists; present MTP review draft; third round of public involvement
- June 27 Update review draft; complete final draft; TCTC conformity determination
- August 29 PIC/TCCs recommendations; MTB consideration for approval
- September Final MTP document completed and sent to federal agencies for review; conformity approval
- November 2025 MTP expires; 2030 MTP approved and implemented

Purpose of the MTP

The Metropolitan Transportation Plan (MTP) is the statement of the ways the metropolitan area plans to invest in the transportation system to the Year 2030. The MTP includes both long- and short-range program strategies and actions that lead to the development of an integrated transportation system that facilitates the efficient movement of people and goods.

A MTP is a tool for helping people in a metropolitan area determine how their area is growing, which way it is headed, and whether they want it to continue going in that direction. The 2030 MTP analyzes what would happen if current trends were allowed to continue to the year 2030. It shows what would happen if no planning for the future were done, and then proposes an alternative to doing nothing. It outlines specific goals and strategies regarding transportation and offers a set of recommendations aimed at relieving congestion, maintaining air quality, and improving quality of life. These long-term recommendations will guide decisions about specific transportation projects to develop and fund in the short term.

MTPs generally include several elements, including:

- Identifying policies, strategies, and projects for the future;
- Determining project demand for transportation services for at least a 20-year period;
- Focusing at the systems level, including roadways, transit, non-motorized transportation, and intermodal connections;
- Articulating regional land use, development, economic development, housing, and employment goals and plans;
- Estimating costs and identifying reasonably available financial sources for operation, maintenance, and capital investments;
- Determining ways to preserve existing roads and facilities and make efficient use of the existing system;
- Being consistent with the statewide transportation plan; and
- Being updated every three years (the next MTP will be updated every four years, in accordance with latest planning rules from SAFETEA).

The MPO will make every effort, in accordance with our approved Public Involvement Procedures, to engage interested parties in the development of the plan. Additionally, the MTP will conform with:

- federal planning regulations (Title 23, Code of Federal Regulations, Part 450);
- the State Implementation Plan (SIP) Revision: Limited Maintenance Plan for Carbon Monoxide (CO) for Albuquerque/Bernalillo County, New Mexico; and
- the Albuquerque/Bernalillo County Air Quality Control Board Transportation Conformity regulations, New Mexico Administrative Code (NMAC) Title 20, Chapter 11, Part 3.

Pursuant to Title 23, Code of Federal Regulations, Part 450 (23 CFR 450), the MRCOG, serving as the Metropolitan Planning Organization (MPO), is responsible for carrying out the metropolitan transportation planning process, including the development, maintenance and updating of the MTP.

Federal Requirements and Guidelines

TEA-21 Planning Factors (Federal Guidance): both the State's and each MPO's planning process must provide for consideration of transportation projects and strategies that address seven factors:

- Support the economic vitality of the metropolitan area, especially by enabling global competitiveness, productivity, and efficiency;
- Increase the safety and security of the transportation system for motorized and non-motorized users;
- Increase the accessibility and mobility options available to people and for freight;
- Protect and enhance the environment, promote energy conservation, and improve quality of life;
- Enhance the integration and connectivity of the transportation system, across and between modes, for people and freight;
- Promote efficient system management and operation; and
- Emphasize the preservation of the existing transportation system.

Pending changes from SAFETEA-LU metropolitan planning requirements:

- Relationship with other planning officials – adds new recommendation to develop a relationship with other planning officials through consulting with officials responsible for State and local planned growth, economic development, environmental protection, airport operations, and freight movements.
- Planning factors – Safety and Security are separated into distinct planning factors. New factor added: the promotion of consistency between transportation improvements and planned growth / economic development.
- TIP – 4-year scope, updated every 4 years.
- Plan:
 - 20-year forecast period, updated every 4 years in maintenance and nonattainment areas.
 - Plans shall include a “discussion” of potential environmental mitigation activities.
 - A financial plan is required with resources identified from both private and public resources.
 - The MPO, transit operator, and the State shall cooperatively develop estimates of funds to support implementation.
 - Operations and management strategies are required that improve the performance of existing facilities while relieving vehicular congestion and improving safety for people and freight.
 - Capital investment and other strategies are required for existing and projected future infrastructure.
 - Proposed enhancements to transportation and transit are required.
- Public participation:
 - Adds representatives of bicycle / pedestrians and disabled persons to those groups that shall be provided opportunity to comment on the plan.
 - Adds requirements for a public participation plan developed in consultation with interested parties.
 - MPOs must hold convenient / accessible public meetings, use visualization techniques, make information / plans readily available electronically.

Major policy and planning issues in most MTPs:

- Air Quality
- Asset management
- Environmental Justice
- Financial planning and programming
- Freight movement
- Land use and transportation
- Models and their uses
- Performance measures
- Project development and the NEPA process
- Public participation
- Safety
- System Management and Operations
- Transportation Demand Management

Federal Transportation Planning Requirements for an MTP, Title 23, U. S. Code of Federal Regulations, Part 450 (23CFR450.322).

1. 20-year horizon
 - Year 2030: 24 year horizon at adoption, 20 year horizon when next update is due.
2. Long-range strategies/actions
 - MTP projects, programs
 - With 2015 “Existing + Committed” Networks and 2030 Horizon Year Networks
3. Short-range strategies/actions
 - 2004 Base Year
 - TIP projects, programs
 - CMS
4. Integrated, intermodal system
 - Roadways
 - Transit Routes and Facilities
 - Bicycle Facilities
 - Pedestrian Facilities
 - Equestrian Facilities
 - Intelligent Transportation Systems
 - Transportation Systems Management (TSM)
 - Transportation Demand Management (TDM)
 - Intermodal facilities map
5. Efficient movement of people & goods
 - Congestion Management System (CMS)
 - Travel Time analyses
 - Freight?
6. Reviewed/updated triennially
 - November 2006
7. Consistent with current & forecasted transportation conditions and trends
 - 2004 Base Year
 - 2015 Committed Networks
 - 2030 Horizon Year
8. Consistent with current & forecasted land use conditions and trends
 - Population and employment estimates
 - Land Use Allocation Model (LAM)
 - Coordination with partner land use planners & developers
9. Identify projected transportation demand of persons
 - Travel Forecasting Model

10. Identify projected transportation demand of goods
 - Freight studies, surveys, data
11. Identify adopted Congestion Management System strategies
 - Update and integrate
12. Identify pedestrian walkway & bicycle transportation facilities
 - Bike/Ped System map
 - WABAG
 - GARTC
 - GABAC
 - “Ditches & Drains to Trails”
 - National Forest & NPS trails
13. Reflect consideration given to results of management systems
 - ITS
 - Freeway Mgmt System concept
14. Assess capital investment/other measures necessary to preserve existing transportation system
 - “Fix It First” policy
 - Roadway maintenance status
15. Make most efficient use of existing facilities to relieve congestion and enhance mobility for people and goods
 - ITS
 - Management systems
16. Include design, scope descriptions
 - Termini, length, lanes, etc
17. Reflect a multimodal evaluation of transportation, socioeconomic, environmental and financial impact of overall plan and major transportation investments
 - Consider TDM, TSM, transit, bike, ped, environmental issues for all markets/projects
18. Indicate study corridors, subareas requiring further analysis
 - US 550
 - Freeway Operations Study
 - Commuter Rail Phase II
 - Paseo del Volcan?
 - Northwest Loop?
 - Southwest Loop?
 - Westside?
 - Bridge Crossings?
 - Light Rail?
19. Include design concept and scope for “placeholders” to permit conformity determination
 - Light Rail?

- Bosque Trail?

20. Reflect consideration of area's comprehensive long-range land use plans and metropolitan development objectives

- Land use plans:
- Trend
- Alternates?
- PGS
- Impact fees
- Master Planned developments
- Pueblos
- Kirtland Community Master Plan

21. Reflect consideration of area's national, State, and local housing goals and strategies

- Contacts?
- Tribal?
- NM Housing goals?
- County Housing goals?
- City Housing goals?

22. Reflect consideration of area's community development and employment plans and strategies

- Contacts?
- Economic development?
- Chambers of Commerce?
- State goals, strategies?

23. Reflect consideration of area's environmental resource plans

- NPS
- NHPC
- SHPO
- State Parks
- NM Fish and Game
- MRGCD
- County/City Parks and Rec
- Others?

24. Reflect consideration of area's local, State, and national goals and objectives linking low income households with employment opportunities

- Environmental Justice
- JARC
- TANF
- State agencies
- Others?

25. Reflect consideration of area's overall social, economic, environmental, and energy conservation goals and strategies

- Social:
- Economic:
- Environmental:
- Energy conservation

26. Indicate proposed transportation enhancement activities

- Enhancement projects
- Landscaping

27. Include a financial plan that demonstrates consistency of proposed transportation investments with already available and projected sources of revenue

- Financial Sub-committee

28. Adequate opportunity for public official and citizen involvement with the development of the transportation plan before it is approved

- SAFETEA: specific Public Involvement Plan for MTP
- PIC
- Public meetings
- Website
- Open houses

29. FHWA, FTA, MPO must make a conformity determination

- After MTB approval, but coordinated as part of MTP development

30. 7 Planning Factors:

- Support the economic vitality of the metropolitan area, especially by enabling global competitiveness, productivity, and efficiency;
- Increase the safety and security of the transportation system for motorized and non-motorized users;
- Increase the accessibility and mobility options available to people and for freight;
- Protect and enhance the environment, promote energy conservation, and improve quality of life;
- Enhance the integration and connectivity of the transportation system, across and between modes, for people and freight;
- Promote efficient system management and operation; and
- Emphasize the preservation of the existing transportation system.

- 2025 MTP Goals: legacy from the last plan
 - 1) Existing Physical System Preservation
 - 2) Preservation of the Physical and Social Environment
 - 3) Urban Form
 - 4) Multimodal and Intermodal Integration
 - 5) Safe, Efficient and Reliable System
 - 6) System and Demand Management
 - 7) Economic Development
- 2030 MTP DRAFT Goals: to be developed and approved by MTB

Goals: *generalized statements which broadly relate from the physical environment to values; state the desires and aspirations for the transportation system as well as for the people and communities served by the transportation system.*

Objectives: *specific, measurable statements related to the attainment of goals.*

- 1) Maintain & Preserve the Existing Transportation Infrastructure
- 2) Provide the Safest Travel Possible for All Modes
- 3) Provide Choices in Access and Mobility for People and Goods
 - **Access:** *a means of approaching, entering, exiting, or making use of a place or facility*
 - **Mobility:** *the ability to move or be moved from place to place.*
- 4) Manage the Existing Systems to Maximize the Return on our Investments
- 5) Provide Transportation that Supports Local Land Use Planning and Community Goals
- 6) Respect and Preserve our Environment
- 7) Provide Transportation Security

Suggestions for Other Goals:

- Improve & Expand Transportation Systems to meet future demand
- Reduce dependence on Interstate Highways for Local Trips
- Expand roadway capacity
- Minimize delay
- Support Economic Development goals

Objectives will be developed to attain the goals.

Public Involvement

The MTP generates a great deal of public interest. To accommodate this interest and to keep interested parties aware of the status of the MTP's development, the MPO follows a robust public involvement/awareness process.

Issues:

- Develop a specific "MTP Public Involvement Plan," in accordance with new SAFETEA planning requirements
- Native American outreach
- Continue multiple-media approach to public involvement

MRCOG has already provided a number of briefings to various groups, associations, elected officials, and government agencies:

June 1	Westside Confab, City of Albuquerque
June 15	Abq District 4 Coalition of Neighborhood Associations
August 3	Abq District 7 Coalition of Neighborhood Associations
August 4	North Valley Coalition of Neighborhood Associations
August 31	Rio Rancho Chamber of Commerce
September 28	Rio Rancho Open House
October 12	Albuquerque – Bernalillo County Air Quality Control Board
November 2	Westside Coalition
November 7	City of Albuquerque Planning Department
November 9	Leadership Sandoval
November 9	District 6 Coalition
November 15	South Valley/Southwest Mesa Coalitions of Neighborhood Associations Open House
2006:	
February 3	NMDOT District 3
February 8	Albuquerque-Bernalillo County Air Quality Control Board
February 23	New Mexico State Transportation Commission
March 2	Graduate Planning Class in Community Development, UNM
March 7	NM Chapter, Air & Waste Management Association

The MRCOG has also provided regular briefings on the project to its standing boards and committees which contain staff and elected officials from the four county area covered by the MRCOG:

TCC	April, June, September 2005; February, March 2006
WABAG	May 2005; February 2006
PIC	July, October 2005
MTB	April, June 2005; February 2006

Stakeholder Coordination

A. Financial Estimates

- Meeting:
- NMDOT District 3
- ABQ Ride

B. Economic Development Goals

- Meeting:
- Ann Simon, MRCOG
- Chambers of Commerce?

C. Housing Goals

- Meeting:
- HUD
- State or local housing agencies?

D. Employment Goals

- Meeting:
- WCCNM
- Linking low-income households with employment opportunities; JARC Plan
 - Susan Bryan, City of Albuquerque

E. Security

- Meeting:
- NM Department of Homeland Security
- Public Safety

F. Freight and Commercial Access

- Meeting:
- Judith Espinosa, ATRI; commodity flow studies; statewide freight flow
- Vic Sheppard, Truckers Association
- Bob Czerniak, NMSU
- Other contacts?
- Issues?
- Data, information?

G. Natural Resource Agencies

- Meeting:
- Environmental Resource / Protection Plans
- NPS
- BLM
- NM Game and Fish – Mark Watson

H. Native American Tribes/Nations/Pueblos

- Meetings:
- Isleta Pueblo
- Laguna Pueblo
- Sandia Pueblo

- San Felipe Pueblo
- Santa Ana Pueblo
- Tohajiilee

I. Energy Conservation Goals

- Meetings:
- Contacts?

Transportation Coordinating Committee (TCC) Guidance and Comments

2/10/06

- I-40 is the only route east through the Sandias and that limits options in that direction.
- Address the influence of land use and residential development habits in the plan.
- Need to address the financial shortfall; may need to propose generating local funds, such as a sales tax.
- Need to operate and plan transportation infrastructure as a region, as the problems on US 550 demonstrate.
- Access across the river (Rio Grande) is a challenge, again as US 550 shows.
- Should analyze benefits and impacts of High Occupancy Vehicle (HOV) and/or High Occupancy Toll (HOT) facilities, especially for effects on travel time.
- Land use is the “800 pound gorilla” in the whole transportation planning effort; very difficult to control or influence, yet profoundly impacts transportation.
- We must explore robust transit options for severely congested regional corridors and must include a detailed analysis of costs, benefits, and impacts.
- What might the “transportation fix” to congestion be, and how much would it cost?
- We need to have some analysis that shows land use/transportation connections examples that could serve as examples or demonstrations of beneficial linkages.
- Paint a picture of what “right” looks like to give some resources and options to our decision makers (the MTB).
- Show how “business as usual” leads to an ever-worsening situation, and then show alternate scenarios that are better and what those might take in terms of policies, projects, and funding.
- RTD: how will it help? How can we show its benefits?

3/10/06

- Consider the following changes to draft goals:
 - Respect and Protect our Environment and Cultures
 - Connectivity and Continuity
 - Maximize Efficiency
 - Support Land Use Planning, Community Goals and Economic Development
- Under goal of providing choices in transportation for people and goods, include alternative modes and intermodalism
- Some more suggested long-term strategies
 - Intermodal connections
 - Intersection Improvements, including grade separations and roundabouts
 - Reversible lanes
 - Transportation Demand Management (TDM) strategies

- Add a Northeast Loop, from Paako development in East Mountains to Placitas in southern Sandoval County
- Add “sidewalks” to “Improve pedestrian access” as a strategy

Metropolitan Transportation Board (MTB) Guidance and Comments

II. Transportation Challenges Today and in the Future in the Albuquerque Metropolitan Planning Area (AMPA)

Year 2025 MTP: the Legacy Plan

The MRCOG is the federally designated Metropolitan Planning Organization (MPO) for Bernalillo County, the southern portion of Sandoval County which includes the communities of Rio Rancho, Bernalillo, Algodones and Placitas, and the Village of Los Lunas in northern Valencia County. Acting in the capacity of the MPO the MRCOG is required to produce (every three years) a Metropolitan Transportation Plan (MTP), which contains a prioritization of all transportation projects over a minimum of the next 20 years. The Plan paints a picture of what a metropolitan area will look like 20 years from now in terms of population, employment, number of vehicles on roadways, etc. Based on this information the plan identifies transportation activities that need to take place to accommodate the anticipated growth: what roads need to be built or improved, what transit, bicycle, and pedestrian facilities need to be developed or improved, and how all these different projects and modes of transportation will work together.

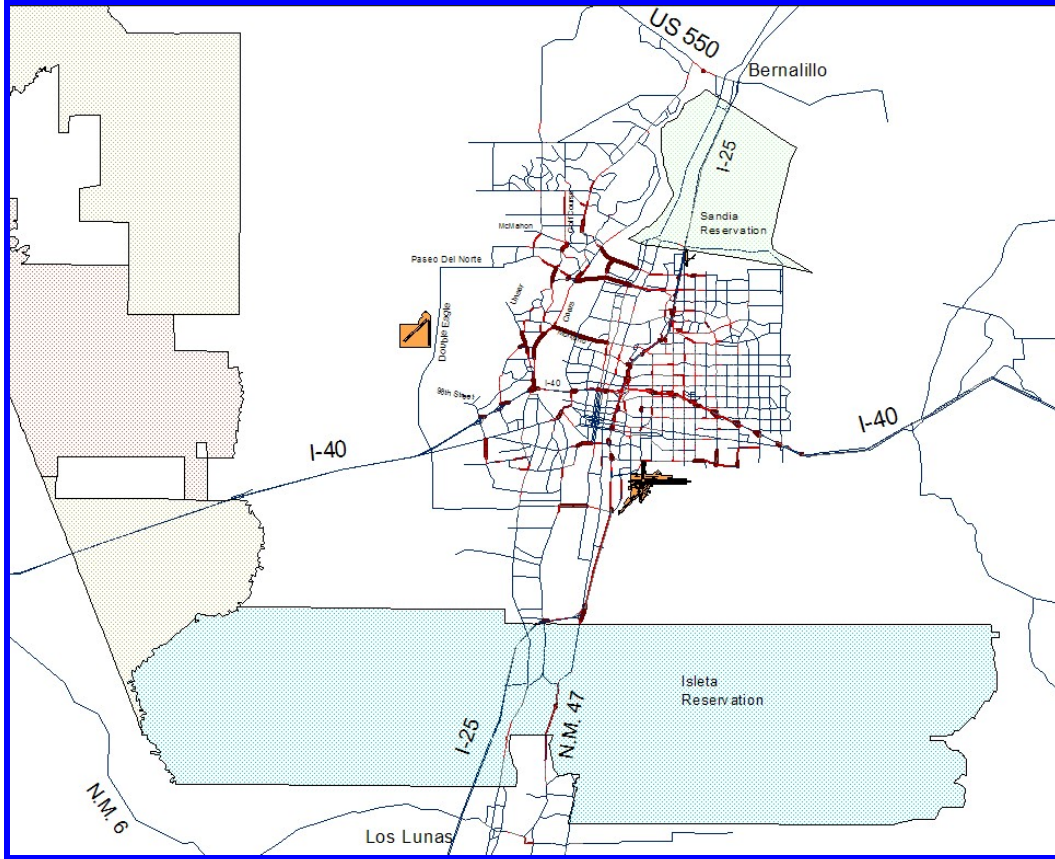
This Plan also has to be financially constrained, which means transportation revenues are projected for the time frame covered by the plan, and the sum of transportation projects and maintenance, cannot exceed expected revenues.

The Mid-Region Council of Governments is the agency responsible for developing the MTP for the Albuquerque metropolitan area. Local elected officials, technical staff and the public worked together to prepare the 2025 MTP, which was approved by local elected officials in May 2003.

The 2025 MTP covers the period from 2003 to 2025. It includes projects ranging from walkways to bicycle trails and from interchange reconstruction to new roadway lanes. It was developed using the most up-to-date information available at the time regarding transportation needs, potential solutions, and available funding.

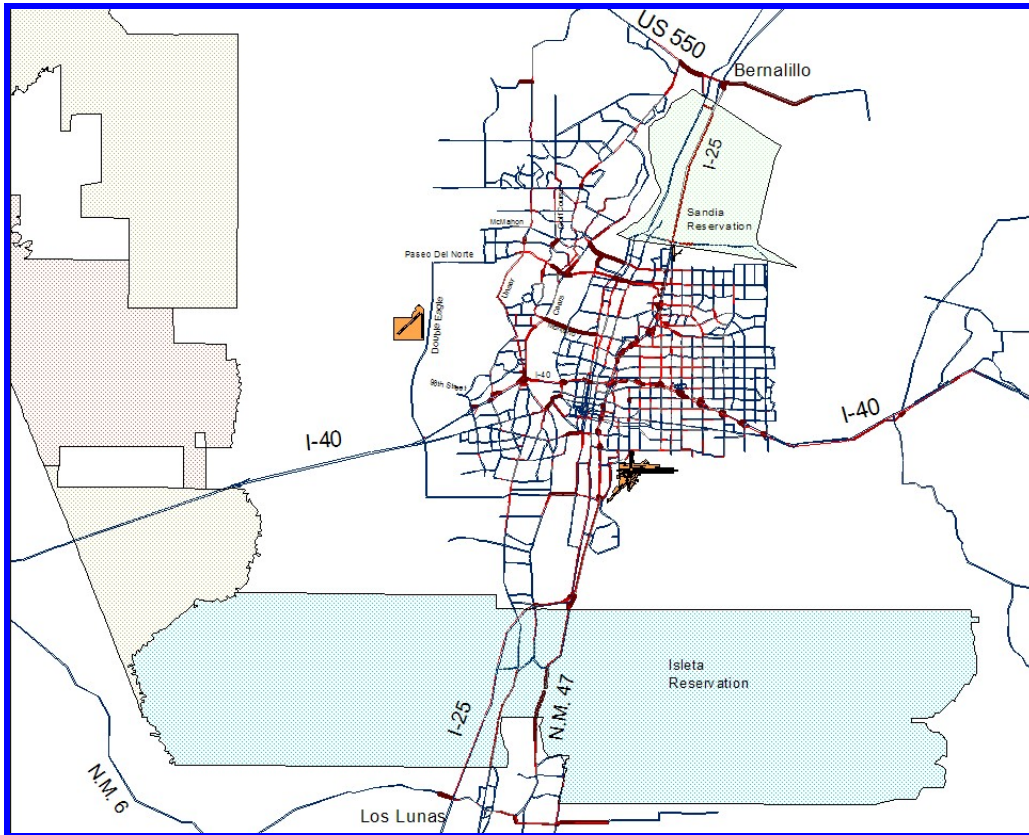
In order to develop this Plan the MRCOG conducted a great deal of analysis to assess the performance of the transportation system at different time intervals. This was done utilizing a series of models that forecast future transportation demand based on the distribution of growth and the anticipated transportation supply. Figure 3. below shows an example of this kind of analysis.

Figure 3. Volume to Capacity Ratios on the MTP Year 2002 Roadway Network (To be updated)



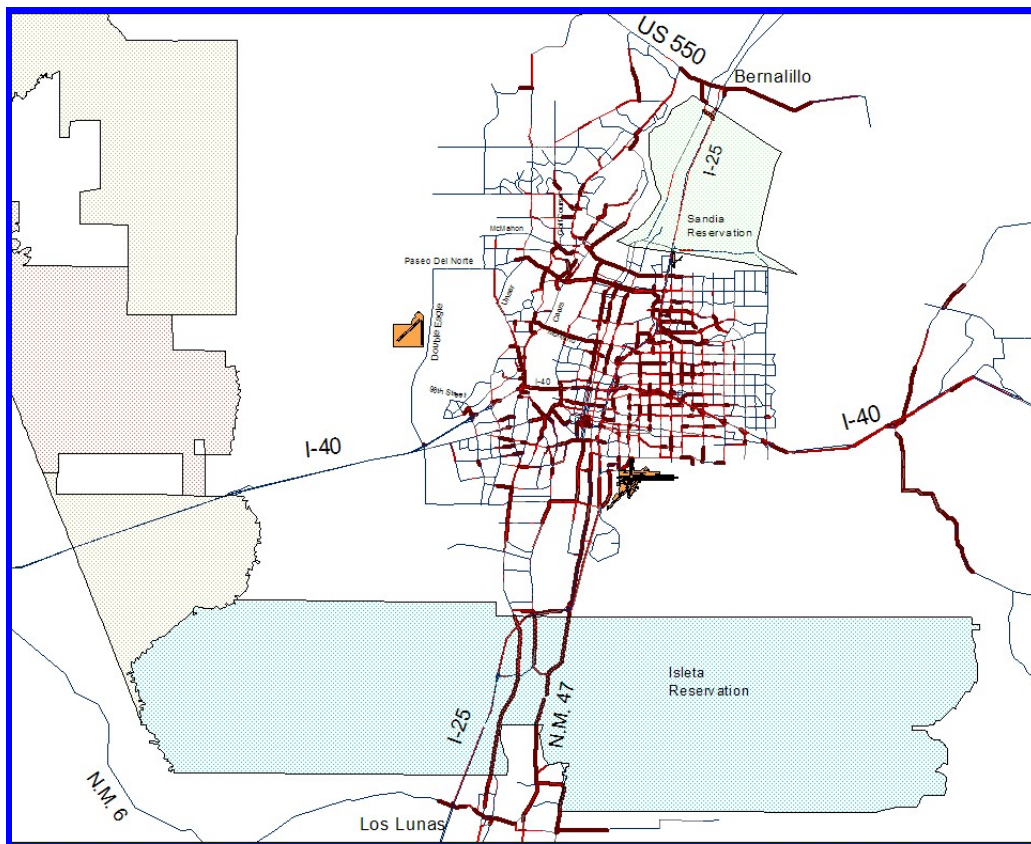
Volume to capacity ratios are a measure of the peak hour auto volumes relative to the hourly capacity of the roadway. Roadways that are in blue have lower volume to capacity ratios and are therefore not congested during the peak hour. Roadways that are red and dark red, are roadways which were at, or over capacity in the peak hour in the Year 2002. The Year 2002 served as a base year for the current version of the MTP. The figure illustrates that the river crossings and several Westside arterials are congested as are portions of the Interstate system. The section of I-25 between Broadway (N.M. 47) and Gibson Blvd. is also experiencing some peak hour congestion. The next figure shows this same information for the Year 2010.

Figure 4. Volume to Capacity Ratios on the MTP Year 2010 Roadway Network



One can see in Figure 4, that despite additional roadway construction projects between now and the Year 2010, there are still many places in the region where roadways are anticipated to be congested. This is particularly true of the river crossings and on the Interstate system. I-25 is projected to be fairly congested from the N.M. 47 Interchange to Gibson, and portions of I-25 and N.M. 47 (the two key facilities that transport traffic between Bernalillo County and Valencia County) are anticipated to experience peak hour congestion through portions of the Isleta Reservation. On the northern side of Albuquerque, I-25 (the only major roadway facility connecting Bernalillo, Northern Rio Rancho and Placitas to the urban area) is anticipated to experience peak hour congestion as are portions of U.S. 550 and N.M. 165 (the state road to Placitas). Figure 3 shows this same information for the Year 2025.

Figure 5. Volume to Capacity Ratios on the MTP Year 2025 Roadway Network



By the Year 2025 peak hour congestion in this region is anticipated to be a great deal worse than it is today, as indicated by Figure 5. All routes connecting Valencia County to the Albuquerque urban area are anticipated to be severely congested for long distances. Even the section between Rio Bravo and Gibson is congested despite the addition of lanes on I-25 between Rio Bravo and Gibson. On the north side (which assumes an additional lane on I-25 between Tramway and U.S. 550 there is still moderate congestion on I-25 but server congestion on U.S. 550 and at the U.S. 550/I-25 Interchange. It is also worth noting the Interstate and arterials adjacent to most of the activity centers in the urban area (Downtown, Uptown, Journal Center, Albuquerque International Airport, UNM/TVI and Intel) are anticipated to be congested. Keep in mind that the roadway network for the Year 2025 includes and assumes many new and capacity enhanced facilities over the base year. In fact, the capital costs of these improvements on the roadway side (in year 2002 dollars), plus the maintenance cost (for the roadway system between 2002 and 2025) is estimated at \$1.9 billion in the MTP.

These figures illustrate that despite extensive expenditures on new roadway capacity, mobility in the region is expected to decline significantly over time. To translate some of this information into more understandable terms, the table below illustrates peak hour travel times between Belen and Albuquerque and Bernalillo and Albuquerque for 2004 and the Year 2025.

Table 1. Auto Travel Times

Downtown Albuquerque to Downtown Belen

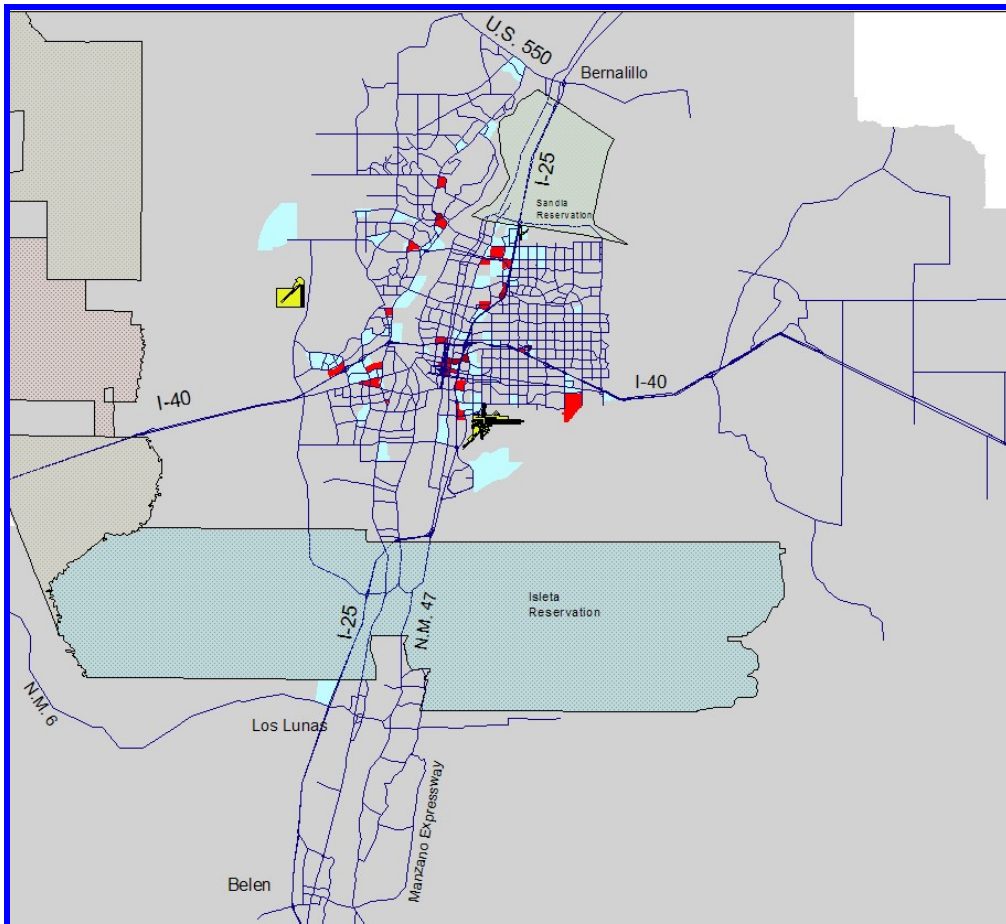
Distance 34 Miles

Peak Hour	Year 2004	Year 2025	Difference
Travel Time In Minutes	45	82	37
Avg. Speed	46 mph	25 mph	21 mph

Downtown Albuquerque to Downtown Bernalillo
Distance 20 Miles

Peak Hour	2004	2025	Difference
Travel Time In Minutes	25	35	10
Avg. Speed	48 mph	34 mph	14 mph

Figure 6. Growth in Jobs Expressed in Jobs Per Acre 2002-2025



There are many factors that explain the degeneration of the region's roadway performance over time. They include growth and the distribution of growth, the costs of and the resources available to provide the necessary transportation services and infrastructure, the existence of significant environmental, physical or political obstacles in many of the critical transportation corridors, and the phenomena of generated traffic.

Figures 6 and 7 illustrate two of these factors more clearly. Figure 6 shows job growth expressed in Jobs per acre between the year 2002 and 2025. Zones colored red are anticipated to experience the most growth in jobs, followed by blue and then grey. Job growth over the next 20 years is expected to occur to a large degree within existing employment centers (Downtown, UNM, Journal Center, Uptown, the Kirtland Complex and Intel).

Figure 7. Growth in Population Expressed in Persons Per Acre 2002-2025

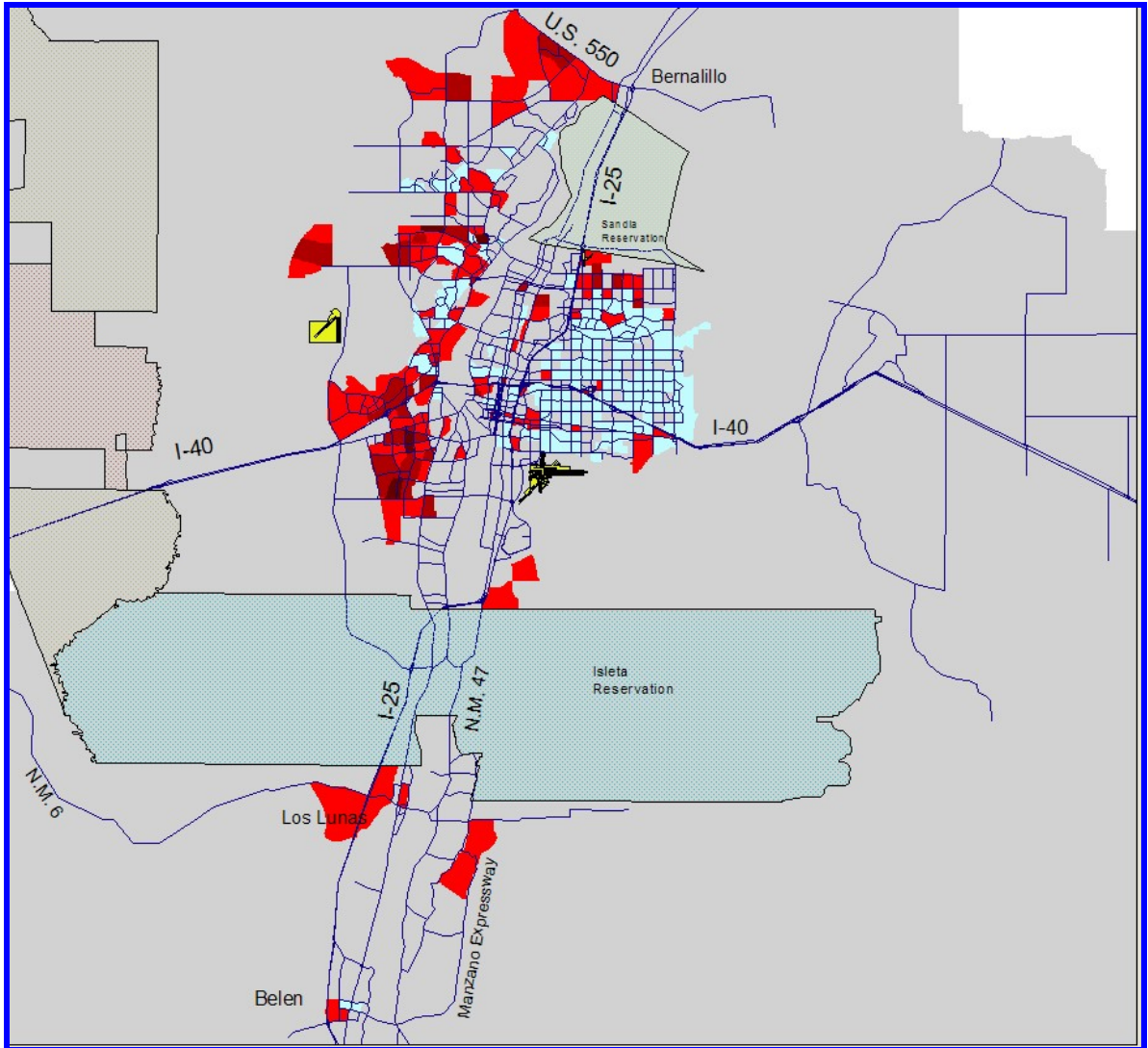
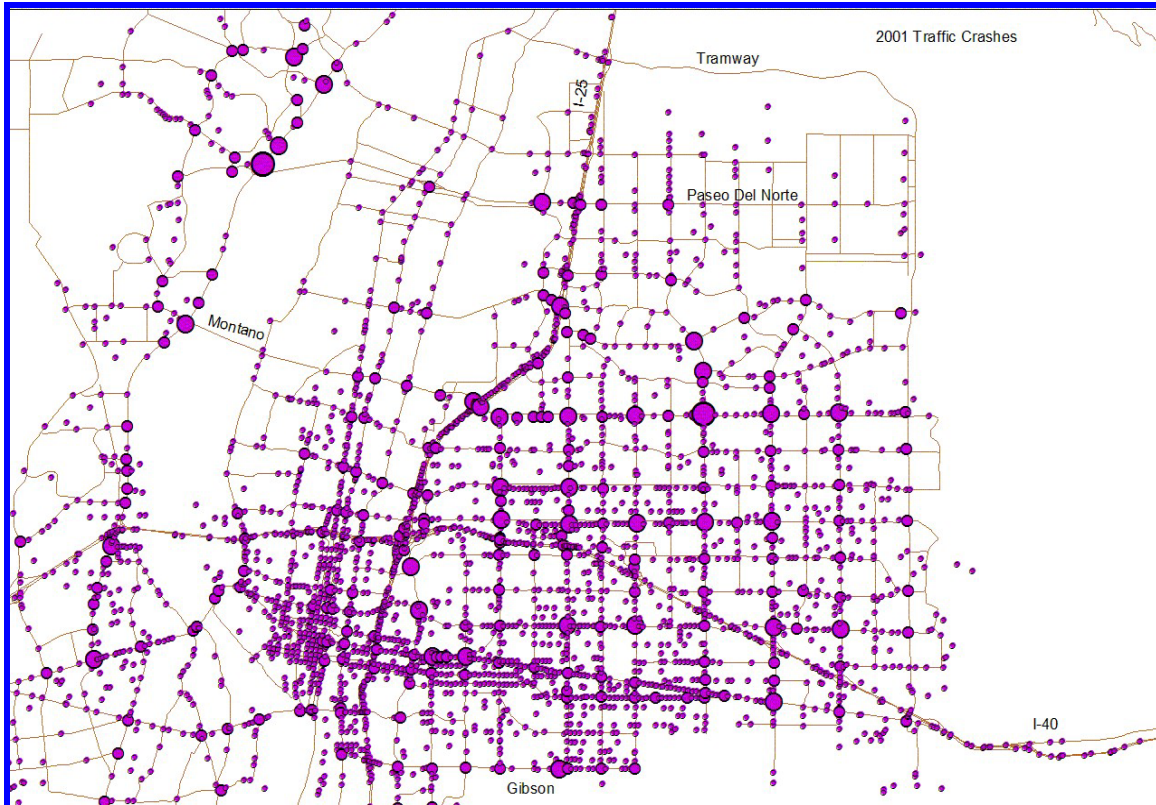


Figure 7 shows the increases in population densities between the year 2002 and 2025. While most of the new population growth expected to occur in this area over the next 20 years is located west of the Rio Grande in the northwest and southwest regions of Albuquerque, large absolute

increases in population are anticipated for Valencia County (particularly in the Los Lunas and Belen areas) and in the Northern Rio Rancho, Bernalillo, Placitas area.

The north south corridor (Belen to Bernalillo) is one that is particularly vulnerable because the growing population centers of Valencia County, Bernalillo, and Placitas.

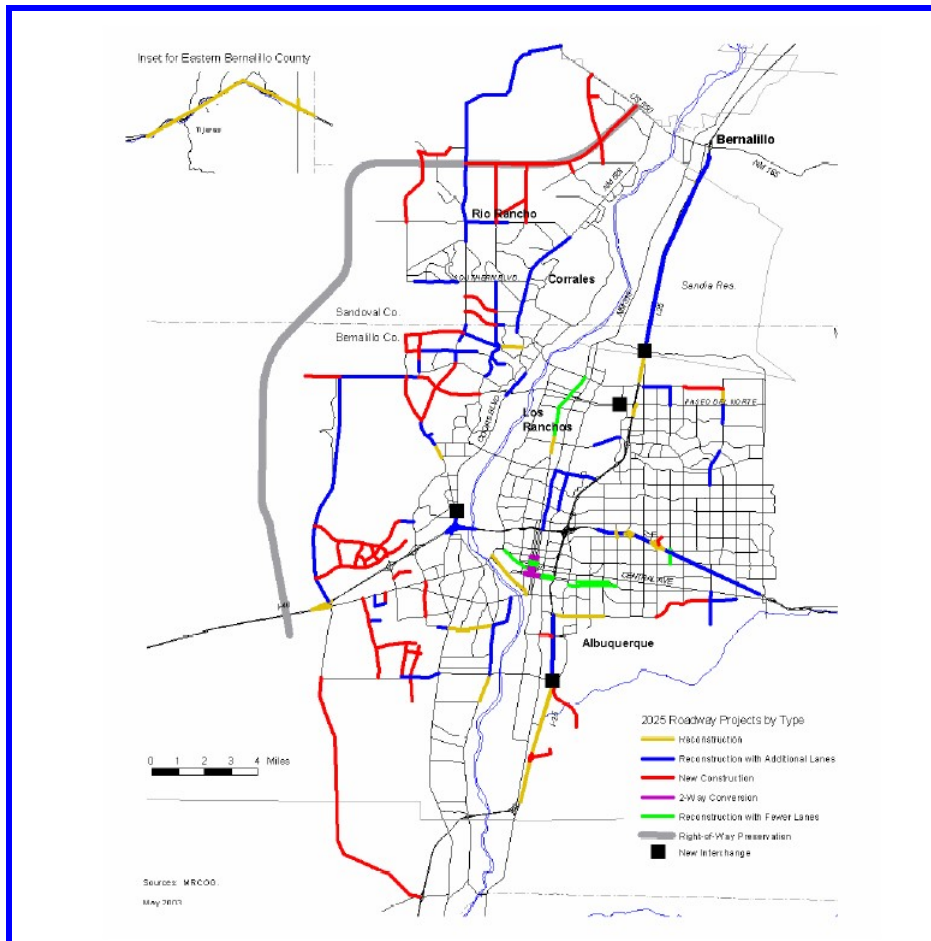
Figure 8. Year 2001 Traffic Crashes in the Albuquerque Area



Larger dots indicate that more crashes have occurred at the location. In the year 2001 there were 1,254 traffic crashes on I-25 between Gibson Blvd. and Tramway Blvd. These are traffic crashes reported through the State Accident Reporting System, so they do not include disabled vehicles on the side of the road, or minor incidents that are not reported. Still this translates into about 3.5 crashes per day. This portion of I-25 serves many strategic destinations including Downtown, UNM/TVI, the Kirtland Complex and the Journal Center. 2003 Average Weekday Traffic Volumes on this section range from 57,800 to 183,500. Traffic crashes on this portion of the Interstate can be extremely disruptive, especially those that occur in the peak periods. While crashes per million vehicle miles of travel are expected to decrease over time, as portions of the Interstate are reconstructed, increasing traffic volumes (and therefore vehicle miles of travel) will result in a steady increase in the total number of traffic crashes on I-25 over time. The end result will be more peak commutes disrupted by traffic crashes.

Roadway construction is another recurring activity that can limit the optimum capacity of the roadway system. Figure 9 illustrates all roadway related projects (of regional significance) included in the MTP. These projects are expected to occur between the year 2002 and the year 2025.

Figure 9. 2002-2025 Roadway Projects



The Figure illustrates that a great deal of I-25 between Broadway (N.M. 47) on the south and Bernalillo (U.S. 550) is anticipated to be reconstructed over the next 20 years. While most roadway construction projects are managed to minimize the impact on the traveling public, all projects will affect the roadways capacity to some degree; either through speed reductions, or lane reductions and in some cases both. The projects on I-25 and I-40 are not planned to occur all at the same time, leading some to perceive that the Interstate system is in a perpetual state of construction.

While this is not entirely the case, it can be said that roadway construction is another factor that needs to be considered when assessing the performance of the roadway system.

It is not easy to communicate the importance of pursuing the implementation of modes that offer an alternative to the roadway system without understanding the short and long term implications

of a single mode transportation system. The Albuquerque Urban area is not unique. It has simply reached a point in its history where road building cannot keep pace with growth and the distribution of growth in this constrained environment. An article in USA Today last Fall elaborates on the Texas Transportation Institute's annual report on the state of congestion in this country's urban areas:

Sprawl produces crawl: bigger cities, bigger traffic jams

USA Today, Sept. 7, 2004

WASHINGTON (AP) - Los Angeles for years has had the nation's worst traffic jams, but these days even the streets and highways in small and medium cities from Brownsville, Texas, to Anchorage, to Honolulu, Hawaii, are giving rush-hour drivers fits. Snarled traffic is costing travelers in the 85 biggest U.S. cities a whopping 3.5 billion hours a year, up from 700 million two decades ago. The problem worsened over the past two decades in small, medium and large cities, according to the Texas Transportation Institute's annual Urban Mobility Report released Tuesday. The institute, part of Texas A&M University, looked at data from 1982 to 2002.

Over that period, the study recorded the greatest leap in congestion in Dallas, from 13 hours annually in 1982 for the average peak-period traveler to 61 hours annually in 2002, and in Riverside, Calif., from nine hours annually per rush-hour traveler in 1982 to 57 hours on average in 2002. The average urban traveler was stuck in road traffic 46 hours a year in 2002, a 187% increase over the 16 hours lost in 1982. Even more startling is the decline of free-flowing traffic during rush hour. In 1982, 30% of urban highways and arteries were congested. Twenty years later, drivers were delayed on 67% of those roads. Alan Pisarski, author of "Commuting in America," said that escaping to a small city no longer means escaping from traffic. "You're beginning to see problems in places that you didn't know had problems, places you've never heard of," Pisarski said. Even in cities with the least bad congestion - Anchorage, and Brownsville, Texas - drivers lost five hours a year to traffic. In medium-sized cities such as Honolulu it was 18 hours. What's alarming is how congestion outpaces a city's ability to handle it. In 54 urban areas, traffic snarls increased 30% faster than roads could be built to alleviate them. Tim Lomax, the report's author, said the news was not all bad. Roads were built fast enough to catch up to spreading populations in some cities, such as Anchorage, New Orleans, Pittsburgh, Tampa, and Charleston, S.C. **"They've been getting worse, but they've been getting worse slower than everyone else," Lomax said. "In the bizarre world of transportation mobility, that's progress."** The report notes that major highway improvements can take 10 years to 15 years to complete. Traffic in some cities has actually gotten better - but that's because their economies have done poorly. "In a lot of the places in the past we've seen success in cities suffering job declines - Pittsburgh, Buffalo, Cleveland," Pisarski said. "Unemployment is a great solution." The biggest time-saver, according to the report, is public transit, which shaves 32% off the time drivers spend sitting bumper-to-bumper. "If public transportation service was discontinued and the riders traveled in private vehicles, the 85 urban areas would have suffered an additional 1.1 billion hours of delay in 2002," the report said. Lomax said the

benefits to transit systems are in cities that are already too congested to handle more vehicles. "Typically you're in a situation where you can't handle any more transit on the roads, so public transit becomes the way you support economic development," he said. The report is based on data from the states and the Transportation Department.

III. Metropolitan Growth, Land Use and Development Plans

Population and Housing Growth

County and Municipal Population 1960 – 2004 (table)
Residential Construction, 2000 – 2004 (map)
Population by DASZ, 2004 (map)

Employment Growth

County Employment by Sector 1990 – 2000 (table)
Commercial Permits, 2000 – 2004 (map)
Jobs by DASZ, 2004 (map)

Existing Land Use

Use by Acreage by County, 2000 to 2004 (table)
EXLU 2004 (map)
Opportunities and Constraints to Growth

Local Comprehensive Plans

Existing Plans that contributed to the development of the MTP

MASTER PLANS

Mesa Del Sol
Westland
Westland West (up on Hill)
Zacate (Westland South)
Campbell Ranch
Paako Ridge
Huning Ranch
Sun Ranch
King Ranch
Quail Ranch
Paradise West
Mariposa
Mariposa East
Cabazon
Enchanted Hills South

Conceptual Plans

Volcano Cliffs

Sector Plans

Tower/Unser
Amole Arroyo
High Desert
Rio Bravo
Barelas

West Route 66
Window G
Nob Hill
La Cueva
Isleta Boulevard
Academy/Tramway-Eubank
The Vineyard
North Interstate 25
Sawmill Wells Park
Paseo del Norte/North Albuquerque Acres
Downtown 2010

Area Plans

East Mountain Area
West Side Strategic Plan
North Valley Area Plan
Southwest Area Plan
Sandia Foothills Area Plan

Municipal/Comprehensive Plans

Northwest Sector Plan (Corrales)
Rio Rancho Vision 2020
Albuquerque/Bernalillo Comprehensive Plan
Los Lunas
Belen
Bernalillo
Bosque Farms
Cuba
Moriarity
Mountainair
Torrance
Tijeras
Village of Los Ranchos

Current and Known Developments (map)

Master Planned Communities (map)

A word about land use model allocation

Future Growth Forecast

Population Housing and Employment Growth to 2030 by County (table)

Population & Housing

Population Growth to 2030 by DASZ (map)

Population Growth by Subarea to 2030 (map)

Housing Growth to 2030 by DASZ (map)

Housing Growth to 2030 by DASZ (map)

The Economy

Annual Growth Rate by County, 2004 – 2030 (table)

Jobs by Sector 2030 (table)

Employment Growth to 2030 by DASZ (map)

Jobs to Housing Ratio by County and Place, 2000, 2004, 2015, 2030 (table)

Activity Centers, Present and Future (map)

Activity Center Employment, 2004 and 2030 (table)

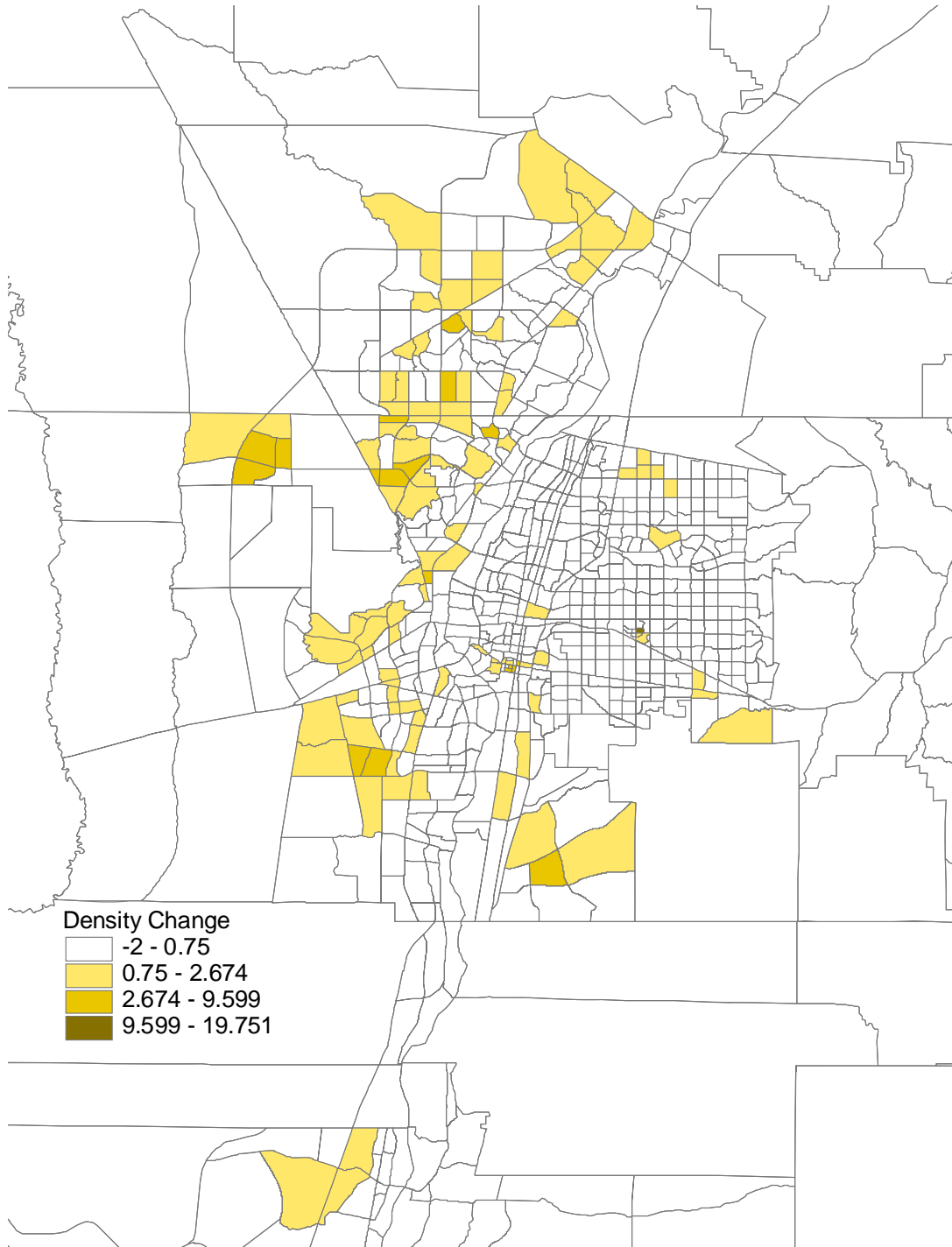
Land Use

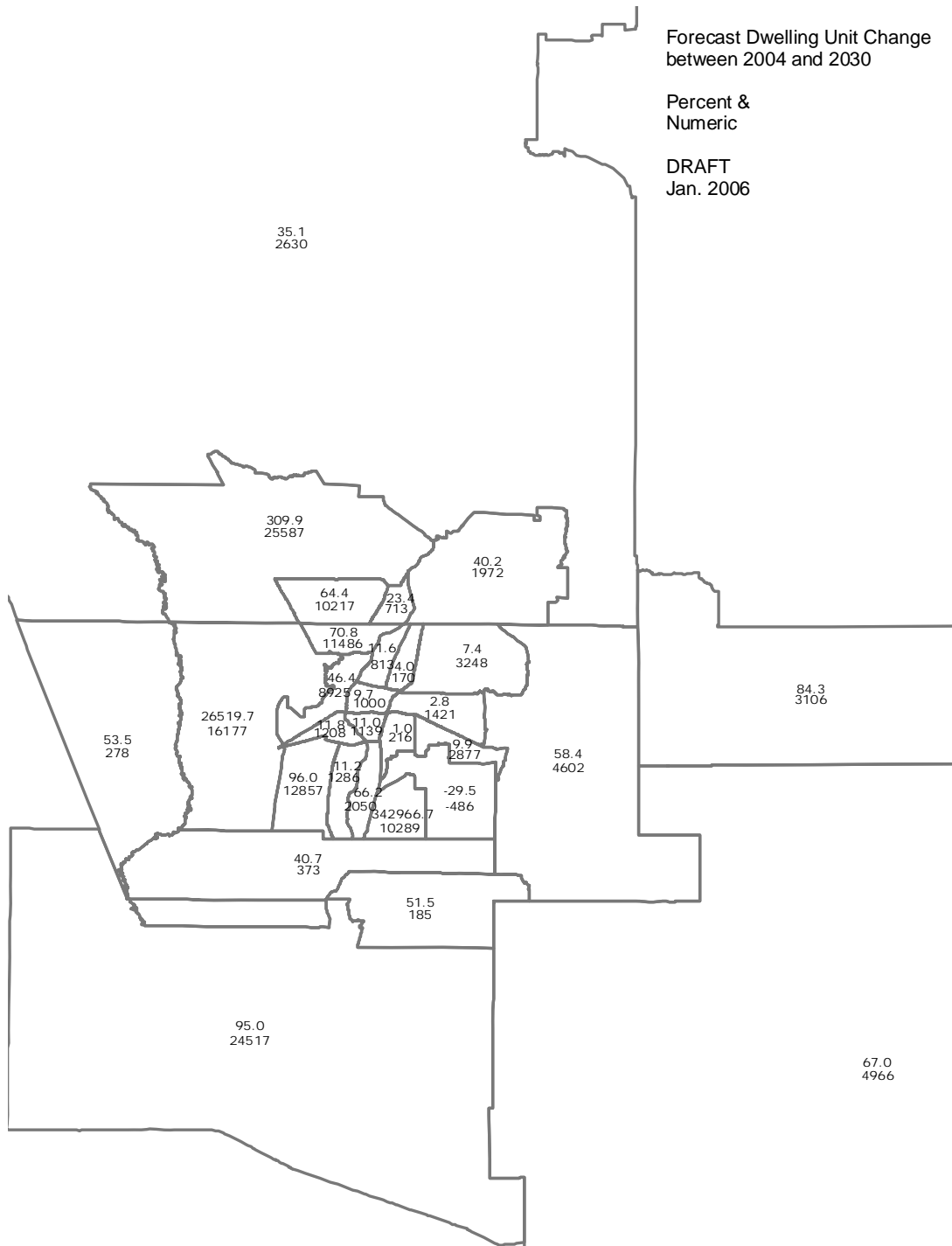
Acres per Use, 2000, 2004, 2015, 2030 (table)

Developed Acres, 2000 – 2030 (chart)

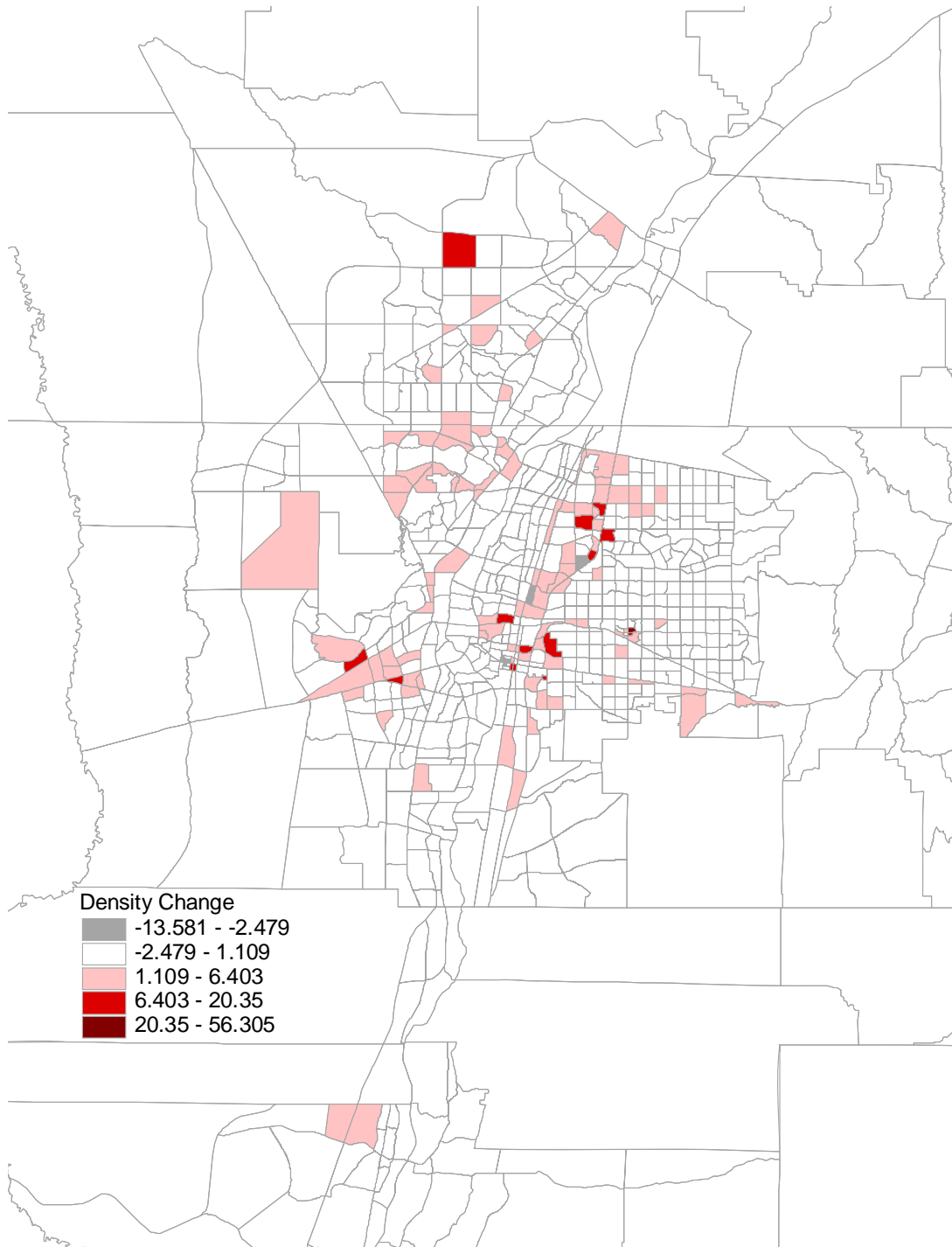
Picture of 2030 Land Use Forecast by Use

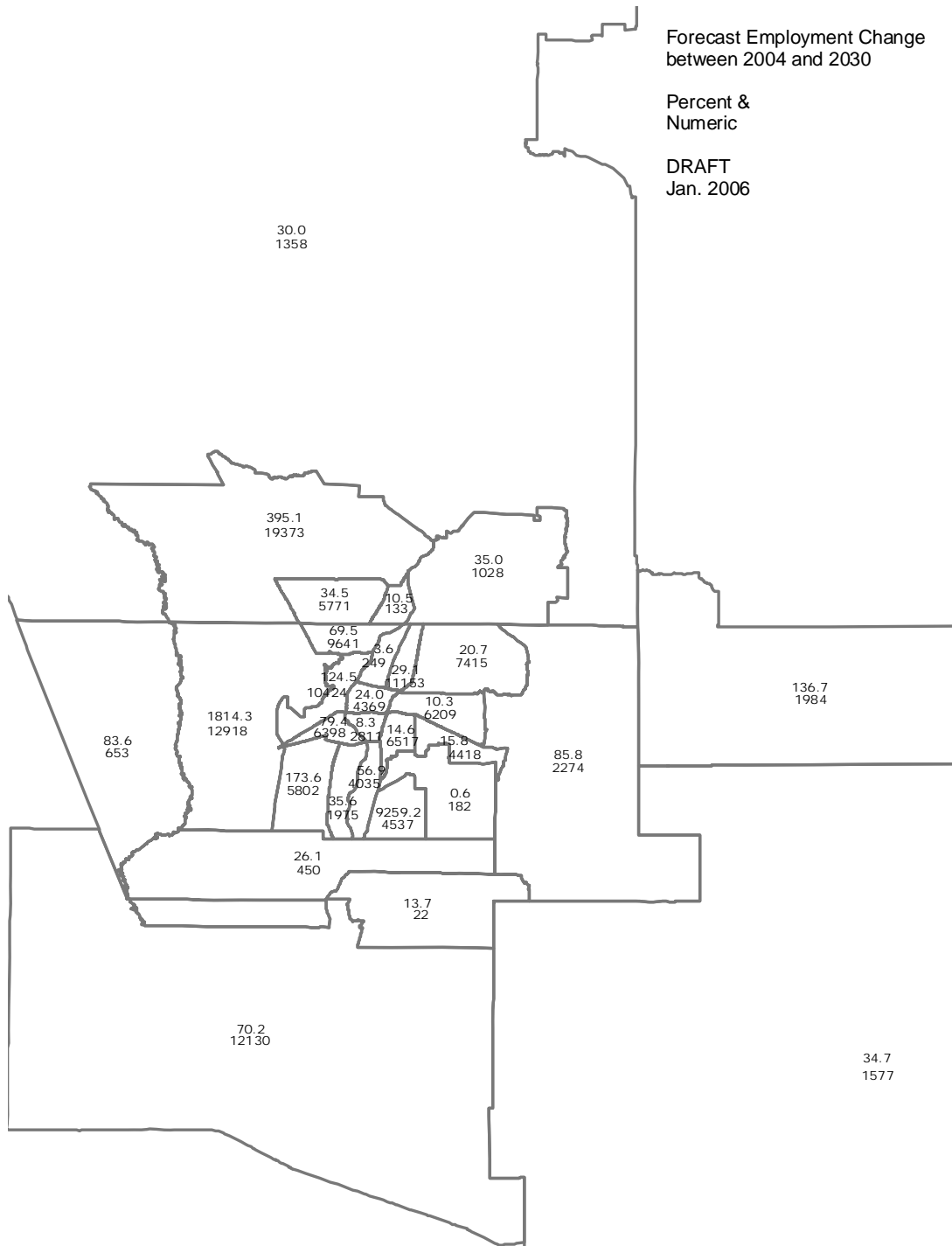
2030 FORECAST POPULATION DENSITY CHANGE

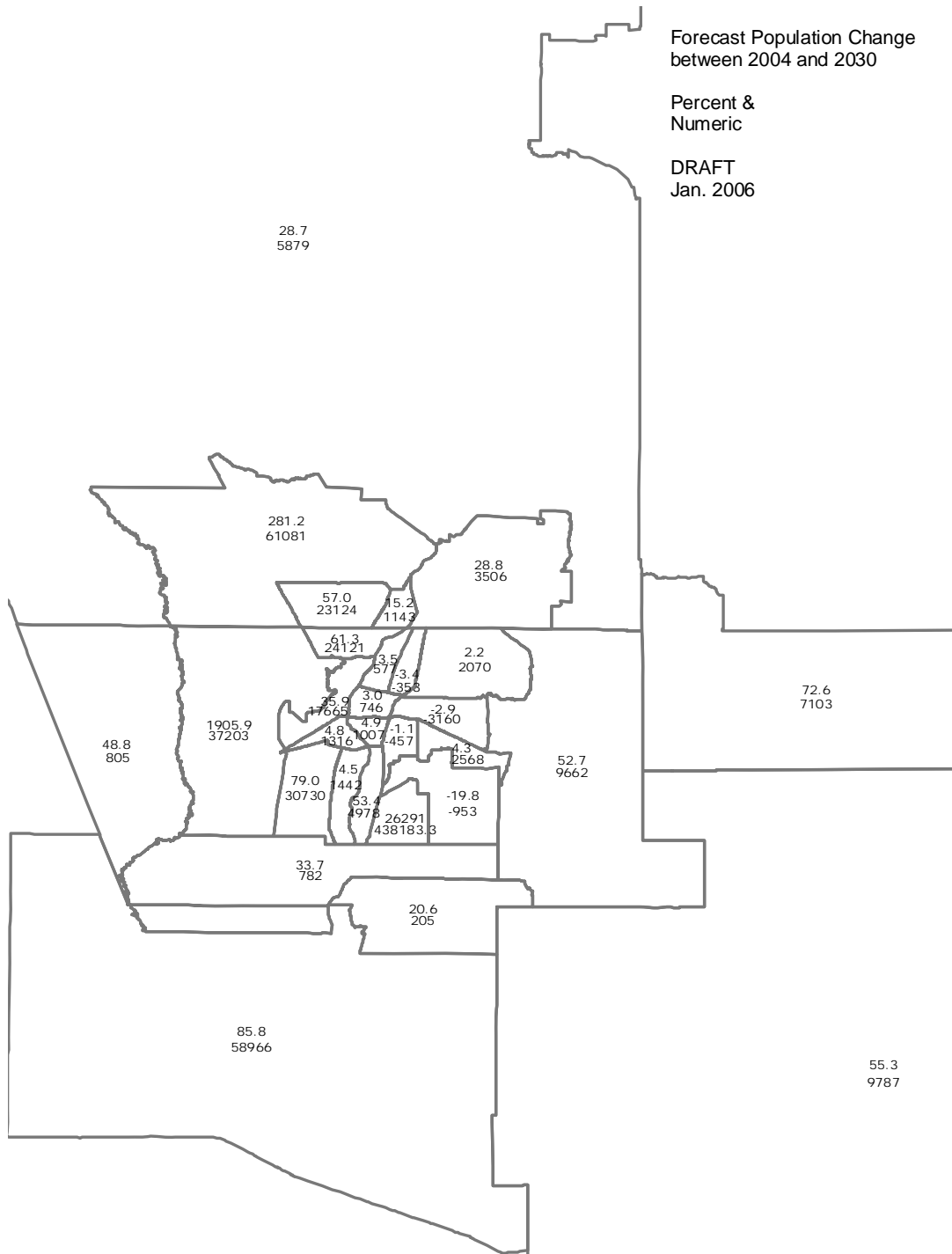




2030 FORECAST JOB DENSITY CHANGE







IV. 2004 Base Year

A. Draft 2004 Base Year Assessment

Potential Socioeconomic/land use data and maps.

- Opportunities and Constraints to Growth
- Residential and Commercial Building Permits, 2000-2004
- Census Journey-to-work for Major Activity Centers
- Emme/2 Travel Forecasts for Major Activity Centers
- Growth map
- Planning Areas map

Potential System maps.

- Roadways
- Transit and Rail
- Bicycle
- Pedestrian
- Intermodal and Freight
- ITS
- Parking
- Enhancements and landscaping
- Functional Classification
- 2006-2011 TIP
- 2025 MTP

Potential Performance data and maps.

- Vehicle crashes
- Bicycle crashes
- Pedestrian crashes
- Bus ridership
- V/C
- Traffic flow
- Travel times
- Freight flow
- Major pedestrian activity centers and access
- Roadway surface conditions
- Bridge sufficiency ratings

V. 2015 Committed Transportation Investments

VI. 2030 Horizon Year Scenarios

A. Year 2030 Transportation Vision, Goals and Policies

Draft Mission Statement: The 2030 MTP is the defining vision for the metropolitan area's transportation systems and services to get you and goods you need to and from your destinations, while preserving our communities and lands, and keeping our air and water clean. The plan results from a collaborative process of consensus building with Federal, Tribal, State, Regional and local partners with significant and early involvement from the public.

Questions and Issues related to Draft Goals/Objectives/Policy Statements:

Goal = the purpose toward which an endeavor is directed.

Objective = something worked toward or striven for; means of achieving goals.

1. Maintain and Preserve the Existing Transportation Infrastructure
 - Will we commit to funding all preservation/maintenance/rehab projects before adding new facilities?
 - How much will they cost?
2. Provide the Safest Travel Possible for All Modes
 - Where are the highest crash rates? Why? What can we do about them?
 - What are the safety issues related to using transit?
 - Do we have rail crossing safety issues?
 - Bike and pedestrian safety issues?
 - How are "safety" and "security" different and what are the issues for each?
3. Provide Choices in Access and Mobility for People and Goods
 - Define "mobility" and "access."
 - Mobility = the ability to move or be moved from place to place
 - Access = the means of approaching, entering, exiting, or making use of land or places
 - What are the major problems, issues and challenges to mobility and access?
 - What are the high demand, regional travel markets/times?
 - How can we get more people across the river to jobs and back each workday?
 - What strategies would work best to get into and out of the metro area, especially during peak hours?
 - Do we want light rail? Where?
 - What are the critical freight and commercial access issues?
4. Manage Existing Systems to Maximize our Return on Investments
 - What system management strategies could we employ?
 - How can ITS be maximized?
 - Will managed lanes, ramp metering work? Where? When?
5. Provide Transportation that Supports Local Land Use Planning and Community Goals
 - What land use strategies might work as demand management tools?
 - Can infill help? Redevelopment?
 - What about "Smart Growth" and/or New Urbanist concepts?
 - What do we mean by growth management?

- How much does quality count? Aesthetics, landscaping, appearance?
 - Are our current land use patterns part of the problem, especially in terms of connectivity, segregated uses, and distances between zones?
 - What are our housing goals and how can transportation support them?
 - What about our economic development goals?
 - Support strengthening and revitalizing our main streets, downtowns, and existing neighborhoods?
6. Respect and Protect our Environment
- What are the critical environmental priorities in the region?
 - What strategies can we adopt that both respect and protect those priorities?
 - Preserving natural areas and agricultural lands?
7. Provide Transportation Security
- What is it?
 - What security issues are there in the metro area? Threats/risks?
8. Other suggested goals
- Improve, expand transportation systems to meet future demand
 - Reduce dependence on interstate highways for local trips
 - Expand roadway capacity
 - Minimize delay
 - Respect and Protect our Environment *and Cultures*
 - Connectivity & Continuity
 - Maximize Efficiency
 - Provide Transportation that Supports Local Land Use Planning, Community Goals *and Economy*

B. Potential Outline of 2030 MTP:

1. Introduction
- Purpose of the MTP
 - Relation to the 2025 MTP: the Legacy Plan
 - Transportation Challenges Today and in the Future
 - The Year 2030 Transportation Vision, Goals and Policies
 - Public Outreach and Decisionmaking
2. Metropolitan Growth, Land Use and Development Plans
3. Transportation Plan Elements
- Integrating Transportation and Land Use Visions
 - Environmental Justice
 - System Performance
 - Metro Roadway System
 - New Roads and Added Capacity
 - System Preservation
 - Public Transportation
 - Fixed Bus Services
 - Rapid Bus and Light Rail Services
 - Commuter Rail Service

- Bicycling Facilities
- Pedestrian Facilities
- Multimodal Passenger Facilities
- Freight Facilities
- System Management
- Travel Demand Management
- Safety and Security

4. Financial Plan

5. Transportation Conformity with Air Quality Plans

6. Future Challenges

- Identified Critical Corridors
- Placeholders
- Other Issues

7. Transportation Improvement Program

VII. Performance Evaluation Measures

Initial Review of Performance Measures – 2/28/06

- Congested Peak Hour Lane Miles (by Level of Service)
- 2004 Lanes Miles by Functional Classification
- Home-based Work Person Auto Trips
- Total Person Transit Trips (Daily)
- Vehicle Miles of Travel (Daily and Peak Hour)
- Vehicle Hours of Travel (Daily and Peak Hour)
- Peak Hour Vehicle Hours of Delay
- Daily Volumes

VIII. Financial Estimates

A. Revenue Estimates

B. Project Cost Estimates

IX. Transportation Conformity with Air Quality Plans

Air quality is an important transportation-related issue, especially for health and economic development purposes. Bernalillo County is designated as a limited maintenance area for Carbon Monoxide (CO). As part of the development of the MTP the MRCOG, in cooperation with the City of Albuquerque Environmental health Department, produces estimates of CO emissions related to mobile sources. This is accomplished by taking transportation summary statistics (speeds and Vehicle Miles of Travel) from the MRCOG travel demand model (by analysis year) and using them as inputs into Mobile6 (the EPA approved Air Quality Model) which produces estimates of CO for future years. In order to insure that Bernalillo County does not exceed National Ambient Air Quality standards for CO and other mobile source pollutants, the MRCOG estimates emissions and closely coordinates with the Albuquerque/Bernalillo County Air Quality Control Board to comply with State Implementation Plans (SIP), and monitor trends, policies, and potential air quality issues as part of the plan development.

As of August 22, 2005, Bernalillo County transitioned to the second of two ten-year maintenance periods for CO and now is designated as a *Limited* Maintenance area. Under this new Limited Maintenance SIP, the MRCOG is no longer required to compare CO emissions to a regional mobile source budget as part of transportation conformity. Instead, transportation conformity is met if there are no measured CO violations in the area and the plan development follows the metropolitan transportation planning process as defined in 23 CFR 450. As a matter of sound transportation planning practice and to maintain awareness of the health, environmental and economic development issues related to air quality, the MRCOG will continue to estimate and assess mobile source emissions.

Table 3. CO Projected Emissions from the 2025 MTP (Bernalillo County)

Mobile CO Emissions in Tons per Day	2005	2006	2010	2015	2025
Former Budget (no longer in effect under Limited Maintenance SIP, as of Aug. 22, 2005)	367.28	312.65	312.65	312.65	312.65
Projected CO Emissions	344.71	308.31	272.01	249.02	246.79
Difference	22.57	4.34	40.64	63.63	65.86
Daily Vehicle Miles of Travel	15,623,747	16,005,062	17,530,322	18,961,531	21,739,212

The table illustrates that over the course of the next 20 years CO emissions in Bernalillo County are expected to decline by almost 100 tons. Put another way, the analysis predicts that on a daily basis, 100 fewer tons of CO will be emitted into the atmosphere by mobile sources in the year 2025 than today despite all of the additional growth in population and Vehicle Miles of Travel. A great deal of this improvement in total emissions is due to an expected continuation of the trend of cleaner burning autos and improvements to fuels. This is one area where future year conditions are predicted to be better than they are today.

Like many medium size urban areas, the Albuquerque region is approaching potential violations to the federal standards for ozone. In fact data from many of the air monitors in this region indicate that the trend has been in the upward direction (towards violations) for several years. Many of these monitors have recorded concentrations that regularly exceed 90% of the standard. In the event that this trend continues, and it appears that it will, this region will likely be found to be in non-attainment for ozone. If this occurs It will be more difficult for agencies to utilize federal transportation dollars for general purpose lane additions to the roadway system, there will be additional pressure on transportation agencies to reduce dependency on auto travel, and additional regulatory requirements will need to be developed to reduce the production of ozone. It is not likely, for the reasons cited above, that commuter rail service will prevent this day from coming, but it can serve as a very important piece of an overall strategy aimed at improving the air quality in the region.

X. Future Challenges

A. Identified Critical Corridors and Studies

B. Placeholders

C. Other Issues

XI. 2007-2013 Transportation Improvement Program

Appendix A

List of Map Products for 2030 MTP

(as of March 15, 2006)

1. General/Regional
 - a. Major Plans and Planning Areas
 - b. Opportunities and Constraints to Urban Growth
 - c. Household and Employment Change 2000-2004
2. 2004 Base
 - a. 2004 Base Year Land Use with Draft Base Year Network
 - b. Base Year LU with 2030 Growth and 2025 Network
 - c. 2004 Base Year Bikeway Facilities
 - d. Bikeway Facilities with 2005 Bicycle Counts and 2001-2004 Crashes
 - e. Bicycle Crash Rates at Intersections 2001-2004
 - f. Vehicle Crash Rates at Intersections 1996-2004
 - g. Roadway Functional Classification System
 - h. 2004 Traffic Flows
 - i. Transit and Intermodal Facilities
 - j. Deficient Bridges on State Maintained Roads
 - k. Draft Equestrian Network
 - l. Pedestrian Crash Rates at Intersections 2001-2004
3. 2015 Existing + Committed (TIP)
 - a. Existing Bikeway Facilities and 2006-2011 TIP Bikeway Projects
4. 2030 Horizon Year
 - a. 2030 Forecast LU with 2025 Network
 - b. 2030 Forecast LU with 2025 MTP Projects
 - c. Historical Development Series of Maps 1935, 1951, 1973, 1991, 2004, 2015, 2025
5. TPTG/MTP 2030 Technical Team Data (as of 2-28-06)
 - a. 2004 Base Year
 - 1) 2004 Network with 2004 Socioeconomics Daily Volumes
 - 2) 2004 Modeling Network Lane Assumptions
 - 3) 2004 Network with 2004 Socioeconomics PM Peak Hour Level of Service (LOS)
 - b. 2015 Interim System-wide performance summaries
 - 1) 2004 Network with 2004 Socioeconomics and 2015 Socioeconomics Performance Summary Statistics
 - 2) 2004 Network with 2004 Socioeconomics and 2015 Socioeconomics Lane Miles, Congested Lane Miles Statistics
 - c. 2015 socioeconomics on 2004 network

- 1) 2004 Network with 2015 Socioeconomics PM Peak Hour Level of Service (LOS)
- 2) 2004 Network with 2015 Socioeconomics Daily Volumes
- 3) Additional PM Pk Hr Volumes with 2015 Socioeconomics on 2004 Network

Appendix B

MTP Technical Advisory Committee Members

(as of February 8, 2006)

ORGANIZATION	MEMBER	ALTERNATE
City of Albuquerque	Margaret Nieto David Flores Tom Menicucci Joel Wooldridge Kevin Broderick John Castillo Andrew deGarmo DuWayne Ordoñez	Neal Butt, Danny Zamora John Hartmann, Ed Adams Mike Riordan Bill Coleman, Andrew Gallegos Jim Hamel Connie Meadowcroft Manjeet Tangri
Town of Bernalillo	Kelly Moe	Maria Rinaldi
Bernalillo County	Steve Miller David Albright	Rebecca Alter
Village of Corrales	Nicole Sanchez-Howell	Vacant
New Mexico Department of Transportation	Brian Degani Mike Plese	Kenneth Murphy Terry Doyle
Village of Los Lunas	Betty Behrend	
Village of Los Ranchos de Albuquerque	Mary Homan	Terry Nighbert
City of Rio Rancho	Kenneth W. Curtis	Leonard Rivera
Sandoval County	Phil Rios	Gino Rinaldi
Village of Tijeras	Vacant	
NON-VOTING ADVISORY MEMBERS		
ORGANIZATION	MEMBER	ALTERNATE
City of Albuquerque Aviation	John D. (Mike) Rice	Jim Hinde
Albuquerque/Bernalillo County Air Quality Control Board	Stephen Pilon	
Albuquerque Metropolitan Arroyo Flood Control Authority	John Kelly	
Federal Highway Administration	J. Don Martinez Joe Maestas	
New Mexico Department of Transportation Public Transportation Programs Bureau	David Harris Frank Sharpless	
Sandia Pueblo	Sharon Hausam	
Santa Ana Pueblo	Nathan Tsosie	
Southern Sandoval County Arroyo Flood Control Authority	David Stoliker	Bob Foglesong

Revised 2/8/06

Appendix C

DRAFT Pedestrian Element

Introduction

Increased levels of walking will be beneficial for transportation, the economic and social environments, the natural environment, the livability of our cities and the health and physical fitness of the overall population. Metropolitan pedestrian planning is a relatively new endeavor in the Albuquerque Metropolitan Planning Area (AMPA). Most of the pedestrian implementation has occurred at the local level and as part of roadway projects. The Mid-Region Council of Governments as the designated Metropolitan Planning Organization for the Albuquerque Metropolitan Planning area is developing a pedestrian section for the 2030 MTP.

Pedestrian projects need to meet the goals and financial constraints of the metropolitan transportation plan development. Pedestrian projects that meet regional goals and purposes are eligible projects consistent with the planning process. A regionally significant pedestrian project receiving funds by or requiring action by FHWA or FTA must be included in the MTP and the Metropolitan Improvement Program (TIP). Understanding the meaning of an “eligible” project under federal regulations is crucial for the success of the regional planning process.

Municipalities and neighborhoods may have somewhat different ideas about pedestrian transportation and a different set of facilities, philosophies and street standards. Reconciling potential conflicts between local and regional perspectives is inherent of any level of planning. When municipalities have good pedestrian plans, the regional planning process will work more efficiently and effectively to meet their needs. In addition, local entities will have a far greater impact on the regional planning process. State and regional guidelines can easily be folded into the State Transportation Improvement Program (STIP), the Transportation Improvement Program and any other pedestrian plans.

Background

Transportation is one of the main factors in defining the way cities grow and the form in which they are designed. Before the time of the automobile, cities were more compact and smaller in terms of area and population. Transportation needs in those times were limited mainly to short distances. People walked or rode animals to get places. Trips for work, shopping, and socializing were generally restricted to walking distances.

With the incursion of the automobile in the 20th century, the way in which people traveled changed. The automobile became the dominant mode of transportation. The raise of real income and the ability of people to afford automobiles after World War II were major contributors of the sub-urbanization process. People chose to move out of

cities. The distances between where people lived and where they worked started to increase. When more people chose to live in suburbs, the roads became more congested and commuting time started increasing. This problem of urbanization created new challenges and difficulties that directly impacted the whole community.

The quality of life started to deteriorate because of congestion, quality of public services, air quality, travel time and distances, land use unbalances, etc. This reality prompted federal, state, and local governments to take policy initiatives to manage such unwanted outcomes.

The Intermodal Surface Transportation Efficiency Act (ISTEA) in 1991 provided a tremendous momentum for non-motorized transportation as a way to bring balance to the transportation needs. That momentum was then continued with the Transportation Equity Act for the 21st Century (TEA-21) in 1998. Through the Safe, Accountable, Flexible, and Efficient Transportation Equity Act: A Legacy for Users (SAFETY-LU) adopted in 2005, this momentum was reaffirmed. Pedestrian needs were brought to a more visible level for transportation planning. SAFETY-LU continued and created additional commitments and principles to address pedestrian needs in our communities.

The Albuquerque region has not been exempt from this process. The AMPA region is continuously expanding in its form, density, and land uses. Transportation needs require creative and integrated approaches to manage the transportation system in the most efficient and effective ways. The allocation of limited resources demands wise ways of doing pedestrian planning.

Albuquerque residents have begun to recognize the potential of pedestrian travel and the barriers that must be overcome. Public and private initiatives have been implemented to provide a better walkable environment to all users and integrate pedestrian activity as a viable activity for our transportation, economic development and quality of life needs.

The Mid-Region Council of Governments (MRCOG) as the Metropolitan Planning Organization (MPO) for the Albuquerque Metropolitan Planning Area (AMPA) has been working on integrating pedestrian needs into the regional planning process.¹ This integration has been taking place through the development of analytical tools and methodologies which help the regional pedestrian planning process. It has also been promoted through training opportunities to the region to address pedestrian planning, engineering, safety, education, etc. With the creation of the Walking & Bicycling Advisory Group (WABAG) in 2003, a new opportunity for regional coordination was set in motion. This advisory group brings to the table regional stakeholders from the public

¹ Federal regulations require a MPO to develop the Metropolitan Transportation Plan in cooperation, coordination, and collaboration with its members and regional stakeholders (23 CFR450.322). The plan needs to identify pedestrian walkway facilities in accordance to 23 U.S.C. 217(g). Regional planning is not intended to replace local planning. The scale of the planning effort is somewhat different in its purposed for a MPO than for a public work, planning, or municipal department of a local municipality.

and private sector to address pedestrian and bicycling issues. The group provides advice to other MPO committee members such as the public involvement, technical, and policy committees.

The MRCOG Pedestrian Composite Index (CPI)

This is a tool to assess pedestrian needs from a regional perspective. It is based on a methodology aimed at identifying areas or markets by their potential for pedestrian activity if improvements are in place. The index does not focus on assessing the quantity or quality of pedestrian facilities (sidewalk inventory or pedestrian audits). It rather focuses on the areas, leaving such detailed assessment and planning to the local level. Local government agencies working with communities are better places to determine the specifics of their neighborhoods and how to implement their pedestrian strategies.

The CPI is expected to become an important regional planning tool for the development of the Metropolitan Transportation Plan (MTP) and the Transportation Improvement Program (TIP). The CPI does not try to include all potential elements that have been identified by the pedestrian planning literature that favors or deters pedestrian activity. It includes elements that are relevant for regional strategic planning and programming in the AMPA and for which data is currently available.

The CPI identifies areas by their pedestrian potential. It is in this regard that conclusions based on it should be complemented with professional judgment (i.e. possible vs. desired) and community values (i.e. rural vs. urban character) that can clearly be addressed at the local planning process. These dilemmas could eventually be integrated into the CPI when knowledge is acquired and databases are developed for this purpose.

The CPI looks into different transportation, land use policy, and safety elements that are grouped in two main categories. The first category groups elements that favor pedestrian activity. The outcome of this category is the “Pedestrian Activity Index”. The second category groups elements that deter pedestrian activity. The outcome of this category is the “Pedestrian Deterrent Index”. The combinations of these two categories are at the core of the CPI.

This analysis has been done in GIS-ArcView environment. This technology provides great flexibility for storing, analyzing and displaying data. Information from each of the elements was geo-coded in a census block. In the long term the goal is to use parcel data.

A unique threshold was created for each of the elements considered. In addition, a scale of 1 to 5 points was used to rank each area for each of the elements. MRCOG tools such as the travel forecasting model, the transportation accessibility model, the traffic monitoring database, and the crash data computer application were used for the analysis.

The Pedestrian Activity Index

This index measures the potential or strength of an area for walking. Elements considered in this index include, proximity to schools, parks, public facilities, access to transit service (bus stops), land use policies (activity centers, corridors, main street, village centers, etc.), commuter rail station areas (potential for TOD type of development), and census information such as vehicle ownership and walk-share.

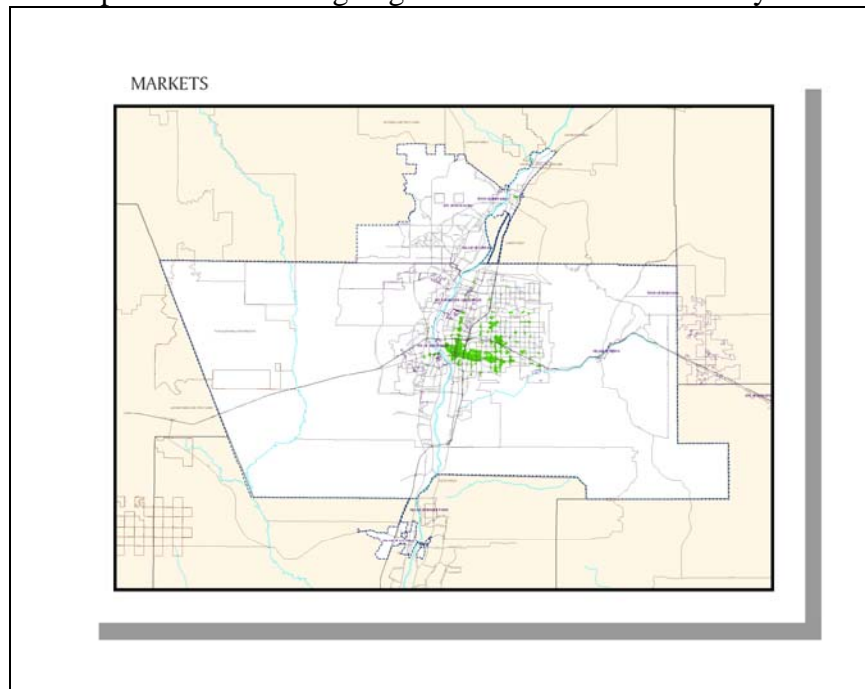
Points were assigned to each census block based on each of the elements analyzed. They were added to produce a total number. A threshold of four classes was made with the help of Arc View. Table 1 shows the number of points by each element.

TABLE 1: Pedestrian Activity Index & Pedestrian Deterrent Index Element Ranking.		Weigh Factors (0 - 0.5 & 1)	
	Description	Urban	Rural
Pedestrian Market Index			
Schools	Important pedestrian trip generator for young age groups. Threshold based on walking travel distance based on 5 minutes intervals from school campus. Scale of 5 points is used to rank areas. 5 points maximum for areas in close proximity to school campus.		
Parks	Important pedestrian trip generator for all age groups. Threshold based on walking travel distance based on 5 minutes intervals from park sites. Scale of 5 points is used to rank areas. 5 points maximum for areas in close proximity to park site.		
Public Facilities	Important pedestrian trip generator for all age groups. Threshold based on walking travel distance based on 5 minutes intervals from public facilities. Scale of 5 points is used to rank areas. 5 points maximum for areas in close proximity to public facility site.		
Public Transit Corridors	Important pedestrian trip generator for young age groups. Threshold based on walking travel distance based on 5 minute intervals from public transit corridors. Scale of 5 points is used to rank areas. 5 points maximum for areas in close proximity to premium bus service.		
Bus Stop System	Important pedestrian trip generator for young age groups. Threshold based on walking travel distance based on 5 minutes intervals from bus stop system. Scale of 5 points is used to rank areas. 5 points maximum for areas in close proximity to bus service stop.		
Pedestrian Volumes	Identify to MRCOG traffic monitoring program levels of pedestrian activity at signalized intersections. Threshold of five classes based on pedestrian count information. A maximum of 5 points for the locations with the highest count.		
Land Use Policy	These are areas that have been identified in municipal plans and other policy documents for special incentives to achieve special land use goals. These goals are characterized by mixed land use, high density, walkable environments, and multi-modal integration. A scale of two values (5 or 0) was used to indicate if an area is within such designation or out.		
Vehicle Ownership	Census information was used to identify areas where vehicle ownership was low. A scale of 5 points was used to rank areas in the AMPA. Areas with none or very low auto ownership got 5 points because it is assumed that residents in such areas depend more on walking than in areas where auto ownership is higher.		
Walk Share	It is assumed that walk share information from the US Census provide an indication of the potential likelihood of walking activity in that area.		
Pedestrian Deterrent Index			
Pedestrian Crash rates	Traffic safety is an important deterrent for pedestrian activity. New Mexico is ranked high in the nation for pedestrian fatalities. A scale of 1 to 5 points was used to rank intersections for which pedestrian crash information is available. Intersections with the worst pedestrian crash record rank high in this index.		
Crime	Personal safety is an important consideration for people to walk or to allow children to		

	walk to school, parks or other destinations. Crime information from law enforcement was used to rank areas based on a 5 points scale. Areas with the high crime activity rank the highest.		
Average Speed	Average speed was used to approximate the level of comfort for pedestrian activity. A scale of 5 points was used to rank areas next to roadway facilities according to the average speed.		
Intersection Volume	Intersection volume is a good indication of the level of traffic activity. MRCOG traffic monitoring information was used to rank areas around intersections. Intersection with high levels of traffic activity rank high as pedestrian deterrent activity.		
Daily Link Volume	Link volume information was used to approximate the level of comfort for pedestrian activity. A high volume facility is assumed to increase the level of exposure of pedestrian and diminish the quality of the environment next to the roadway facility environment. A scale of 5 points was also used to rank areas adjacent to roadway facilities based on traffic volume.		
Street Light (pending)	Street lights have been identified as a consideration for pedestrian activity. In urban areas the lack of street lights increases the risk for pedestrian crashes. Drivers have more difficulty in seeing pedestrian in areas with poor visibility at night. In rural areas the perception of street lights is valued differently. The lack of street lights is valued as a good element to preserve the rural character of the area.		
Street Connectivity (pending)	Street connectivity information was used to approximate how well or not areas are connected that facilitated pedestrian activity. Areas were ranked according to a street connectivity measurement developed by MRCOG. Areas with low connectivity rank high on a 5 point scale.		

Map 1 shows areas with a high pedestrian activity index value. As expected, areas characterized by mixed-use development and good transit service and proximity to different pedestrian destinations rank high. Examples include Albuquerque downtown, 4th Street corridor, Uptown area, and Central Ave. East corridor.

Map 1: Areas Ranking High in the “Pedestrian Activity Index”

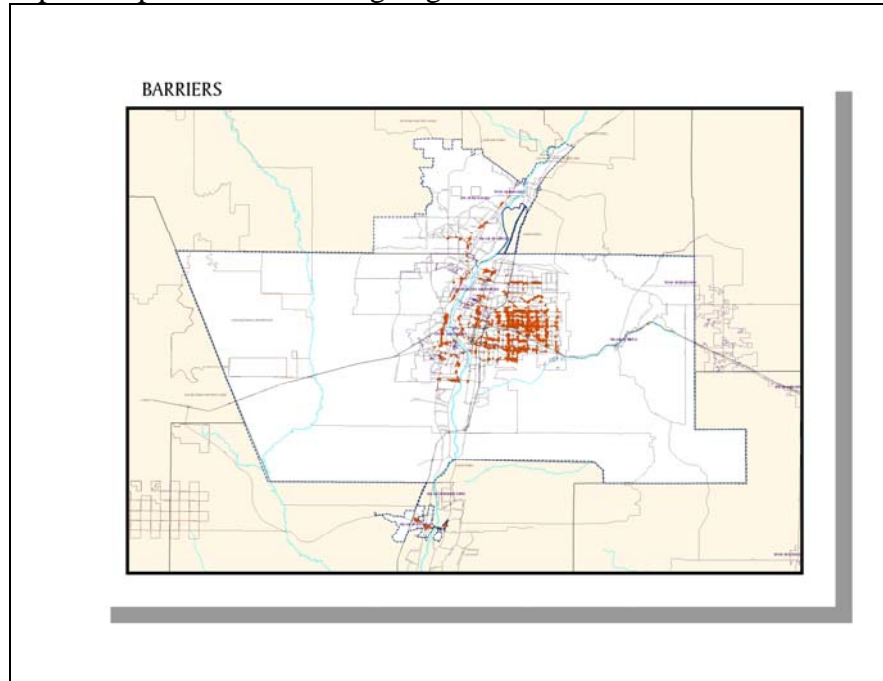


The Pedestrian Deterrent Index

This index measure elements that are considered to discourage the walking potential of an area. Elements included were pedestrian safety (crash data, personal safety (crime), and street lighting (pending)), average speed, intersection volume, daily link volume, and street connectivity (pending).

Points were also assigned to each census block following the above methodology. Table 1 shows the number of total points by each element considered. Map 2 shows areas with the highest pedestrian deterrent index value. Areas such as: Coors Blvd., Central Ave., Uptown, Menaul Blvd., San Mateo, Montgomery Blvd. Wyoming, Eubank, Juan Tabo, 4th Street, are some examples of areas and corridors where the pedestrian deterrent index rank high. These areas require different levels and form of improvements.

Map 2: Map 1: Areas Ranking High in the “Pedestrian Deterrent Index”



Establishing priorities

Once the four category threshold (from low to high) for each of the indexes has been established, a summary matrix was created. The matrix will provide different combinations of the “pedestrian activity index” and the “pedestrian deterrent index” values. Five classes were created for the simplicity of the analysis that works as follows:

Pedestrian Composite Index					
	Pedestrian Deterrent Index				
		D: Low	C	B	A: High
Pedestrian Activity Index	D: Low	Class 2	Class 5	Class 5	Class 5
	C	Class 2	Class 2	Class 5	Class 5
	B	Class 1	Class 3	Class 4	Class 4
	A: High	Class 1	Class 3	Class 3	Class 4

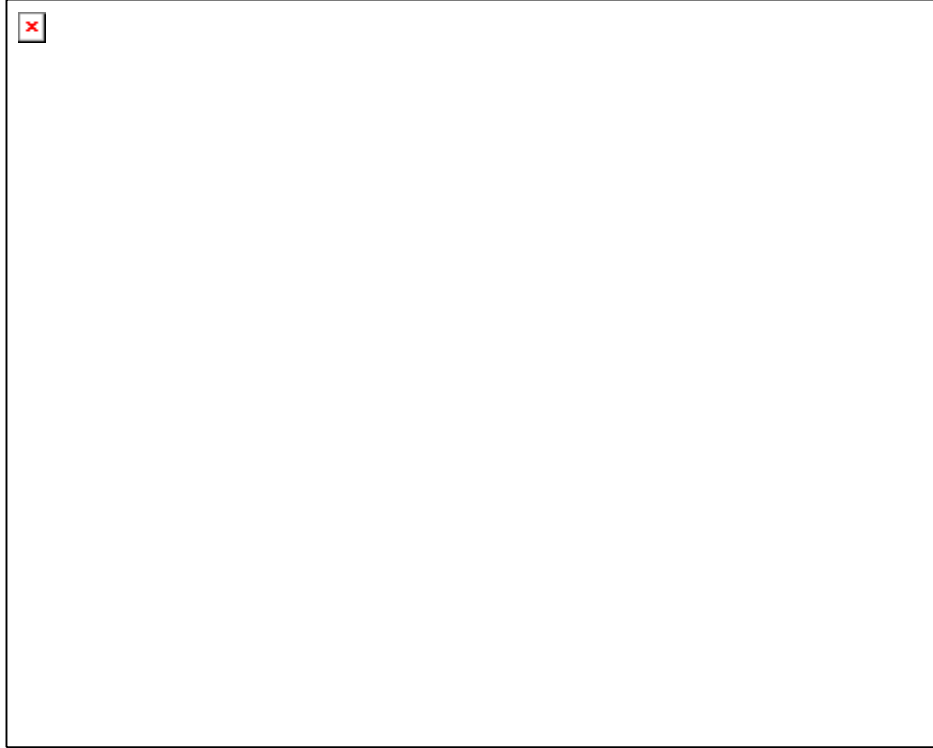
The information summarized in this 4X4 matrix resulted in 16 possible combinations of pedestrian market index and pedestrian deterrent index values. These combinations are at the heart of the CPI.

This pedestrian index works as follows: An area with a high value in the “Pedestrian Activity Index” and a low value in “Pedestrian Deterrent Index” identifies an area where the likelihood of pedestrian activity is high and the need for improvement is low. On the other hand, an area that has a low score in the “Pedestrian Activity Index” and high value in the “Pedestrian Deterrent Index” indicates that the pedestrian market is low and the need for improvements to address the deterrent elements is high (in need many resources).

From a strategic planning point of view, class 3 and 4 could be considered primary target areas for programming limited federal and state resources. These classes mean that the potential for pedestrian activity is present and can be enhanced with improvements to address the deterrent for such potential. Improvements are important because elements that favor walking are already there.

Map 3 shows such areas with missing sidewalk inventory information on top. As expected, areas along 4th Street Corridor, Central Ave east of downtown, Albuquerque downtown area, Coors Blvd. around I-40 and north of Central Ave., San Mateo Corridor, the Presbyterian Hospital, UNM, and Uptown area, are some areas identified as areas where improvements could be implemented and a return of pedestrian activity could be expected.

Map 3:



A word of caution needs to be said. The priority area identification provided by this analytical tool should not be the only criteria. Planning is a more dynamic and rich field for creativity and partnership. If an opportunity arises to implement a project or a program in an area not included as a target by this method, the opportunity should not be ignored. This methodology has been developed with the specific purpose of regional planning and does not intend to supplant or supersede the local planning process which provides more means to develop a detailed intervention. Some of the potential strategies to improve target areas include engineering, enforcement, education, design, land use, etc.

Map 4 shows a blowup of a core area of Albuquerque with class 3 and class 4 which includes missing sidewalk information from the City of Albuquerque database. This kind of analysis is very useful because it integrates the CPI and the missing sidewalk inventory at the local level.

Map 4:

**Pedestrian Composite Index for the AMPA:
A Preliminary Analysis of Class 3 and 4**



Pedestrian issues in policy documents

A survey of local policy documents to determine the level in which local municipalities address pedestrian needs has been completed. The results of the survey are shown in Table 2. Most of the local government documents reviewed made reference to pedestrian activity, facility type, design, and safety. The documents also recognized the desire to develop an integrated multimodal transportation system in which pedestrian systems are critical. The level of specificity in which pedestrian issues are addressed varies among documents as well as how resources are allocated, facilities are built and how the needs of all users are considered.

The following table provides a general summary of how these documents by municipality address some of the pedestrian issues. This table is a working product for which additional information still needed.

Pedestrian Policy Review								
	City of Albuquerque	Bernalillo County	City of Rio Rancho	Town of Bernalillo	Village of Corrales	Village of Los Ranchos of Albuquerque	Village of Tijeras	Village of Los Lunas

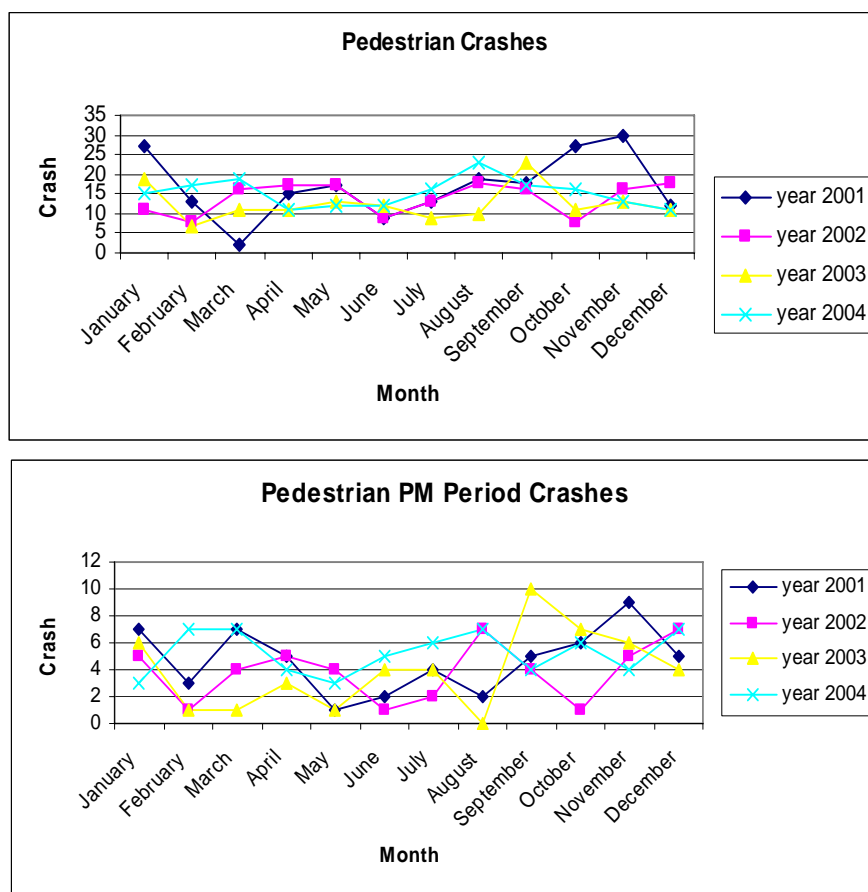
Comprehensive Plan								
Main Street Program (s)								
Activity Center or Corridor Policy								
Pedestrian Goals in Plan Documents								
Pedestrian Design Consideration in Policy Documents								
Intermodal Integration in Plan/Policy Documents								
Pedestrian Consideration in all Ordinance								
Pedestrian Safety Consideration in Policy Documentation								
Dedicated Funding for Pedestrian Facilities								
Pedestrian Design Standards For New Subdivision Projects								
Street Design Standards include sidewalks								
Zoning ordinance identifies areas where mixed used are								
Residential & Commercial development ordinances address street design								
Development ordinances require sidewalks on both sides of the street								
Development ordinances require sidewalks on one side of the street								
Development ordinances require sidewalks if property is developed								
Development ordinances require sidewalks connections with other modes of transportation (transit, rail, bikeways)								
Are ADA considerations included and implemented in all transportation projects?								
Is the Municipality implementing an ADA Transition Plan?								
Do you reference ASHTO or other document for pedestrian facility design and implementation?								

Pedestrian Safety

Safety is one of the most important considerations for travel and the transportation system performance. Safety need to be integrated into all phases of transportation planning, design, construction, maintenance, and operation.

Crash information is an important reference to assess transportation safety. Pedestrian crash data can be study by the frequency in which a crash occurs at any location by reviewing crash information over time. Another way is to look at the crash data in relation to the level of motorized activity at any location (crash rate). Table 2 shows information of the top ten locations in the Albuquerque Metropolitan Planning area by the number of bicycle crashes as well as by bicycle crash rates.

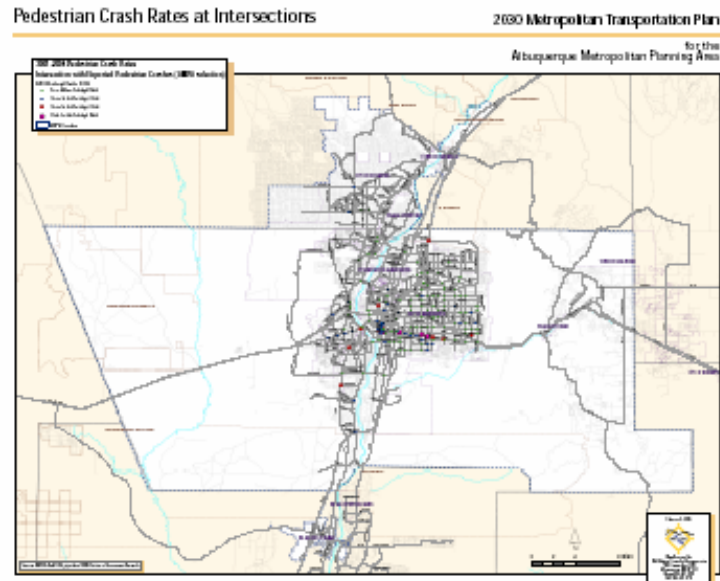
According to the Division of Government Research of the University of New Mexico crash database, approximately 719 pedestrian crashes were recorded during 2001 to 2004. August, November and January are months in which pedestrian crashes occurred with frequency during the study period (see graphic 1). In average, approximately in average 81.1% of the pedestrian crashes include personal injury and about 30% of them occurred during the PM peak period which starts at 3:00 pm and go to 7:00 pm (see graphic 2). Starting the pm peak period at 3:00 pm, guarantee the inclusion of the end of the school day.



Pedestrian crashes concentrate along Central Ave. but are cluster in area when the analysis is based on crash rates. Map 2 shows crash rates at intersection for the metropolitan planning area. Areas with high crash rate are around UNM campus, downtown Albuquerque, and the area surrounded by Lomas Blvd., Indian School, Juan Tabo, and Tramway.

Pedestrian Crash Data for the AMPA 2001-2004			
Top 10 Location (rank by number of crashes)	Pedestrian Crashes	Top 10 Location (rank by crash rate)	Pedestrian Crash Rates
Central Blvd. - San Mateo Blvd.	14	Central Blvd. – San Pedro.	0.1502
Central Blvd. – San Pedro	11	Central Ave. – San Mateo Blvd.	0.1402
Montgomery Blvd. – San Mateo Blvd.	9	Central Ave. – Yale	0.1279
Central Blvd. – Louisiana Blvd.	8	Coal – 2 nd Street.	0.1094
Central Blvd. – Wyoming Blvd.	7	Sage – Old Coors	0.1014
Central Blvd. – Yale	7	Matthew Blvd. – 12 th Street	0.1002
Central Blvd. – Pennsylvania	6	Tramway Rd. – Tramway East ramp.	0.0971
Central Blvd. – Atrisco	5	Central Ave. – Louisiana Blvd.	0.0958
Central Blvd. – Coors Blvd.	5	Gun Club. – Coors Blvd.	0.0932
Highland Ave. – San Mateo Blvd.	5	Copper Ave. – 3 rd Street.	0.0923

Map 2



Information about the cost associated with the proposed bikeway infrastructure will be provided in future updates of this document. A table listing all bikeway projects considered for the 2015 scenario and the 2030 scenario will be provided. In addition, information about roadway projects will be added and include bicycle facilities.

Appendix D

DRAFT Bicycle Element

As required by federal regulation, the MRCOG-MPO is addressing this important mode of transportation in the 2030 MTP. For the first time the 2025 MTP provided an extensive section on bicycle regional planning. With the adoption of the Intermodal Surface Transportation Efficiency Act (ISTEA) in 1991 and the subsequent federal transportation bills, bicycle planning and implementation was accelerated. The Albuquerque Metropolitan Planning area has experienced a tremendous momentum in bikeway construction and funding opportunities. This has resulted in an extensive bikeway network in the region.

Even though the Future Albuquerque Area Bikeways and Streets (FAABS) document and process intended to address some regional bikeway elements, there is not a regional bicycle plan or regional standards. Municipalities have approached bikeway planning in different ways through the years and rely on the Long Range Bikeway System map for the local planning. Updating this map has been an exercise that responds primarily to local programmatic needs in the short-term and that has no fiscal constraint considerations for the future. Proposed alignments were identified without a comprehensive, land use and multimodal planning analysis. The FAABS document and its products have been integrated.

MPOs are required to manage the metropolitan transportation process (23CFR450.300).

The City of Albuquerque and the County of Bernalillo adopted the Trails and Bikeways Facility Plan in 1993. This plan established long-range policies for off-street multiuse trails and bicycle facilities. The Albuquerque Comprehensive On-Street Bicycle Plan was adopted by the City of Albuquerque in 2000. Both documents are multi-jurisdictional planning efforts between two major municipalities in the Albuquerque Metropolitan Planning Area (AMPA).

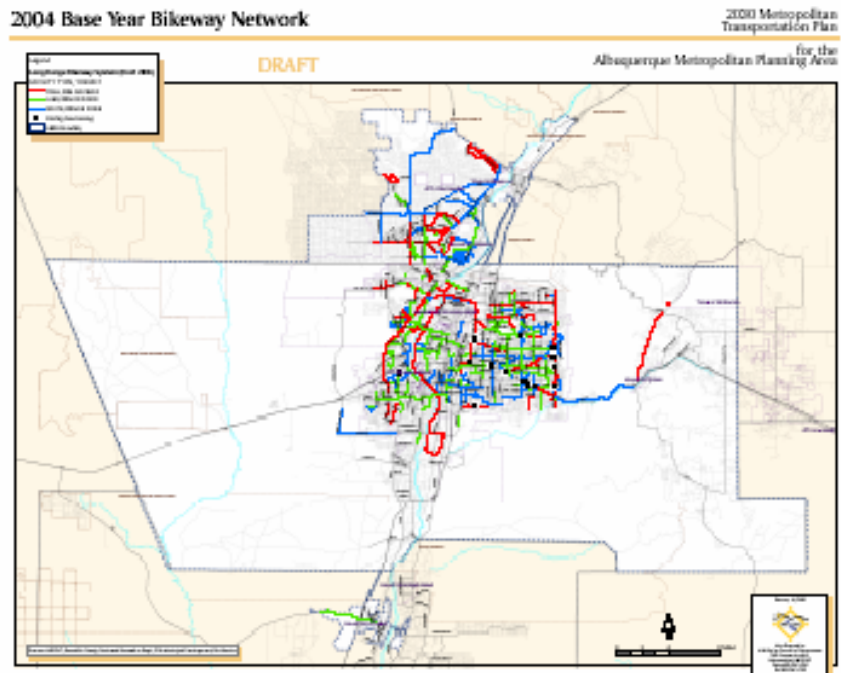
Table 1 shows the number of bikeway miles in the AMPA that have been developed since 1974. The number of miles of bikeway facilities far surpasses what was proposed in 1974.² Although this accomplishment is an important asset to the region of Albuquerque residents, accessibility, connectivity, safety and a continuous network are still challenges today.

² The Bikeway Study, City of Albuquerque, 1974.

Table 1: Number of Bikeway Miles by Functional Class							
Facility	1974 Proposed	1980 Existing	2000 Existing	2004 Existing	2015 Proposed	2030 Proposed	
Lane	60.1	12.8	94.4	124.2			
Route	54.4	86.9	107.8	109.5			
Trails	88.3	14.6	91.7	104.8			
Total	202.8	114.2 *	293.9	338.5			
* Approximate number, MRCOG							

The AMPA's bikeway network currently consists of approximately 124.2 centerline miles of bike lanes, 104.8 miles of off-road trails and paths, and 109.5 miles of bike routes. Map 1 shows the bikeway base year network or 2004 bikeway network by functional class.

Map 1

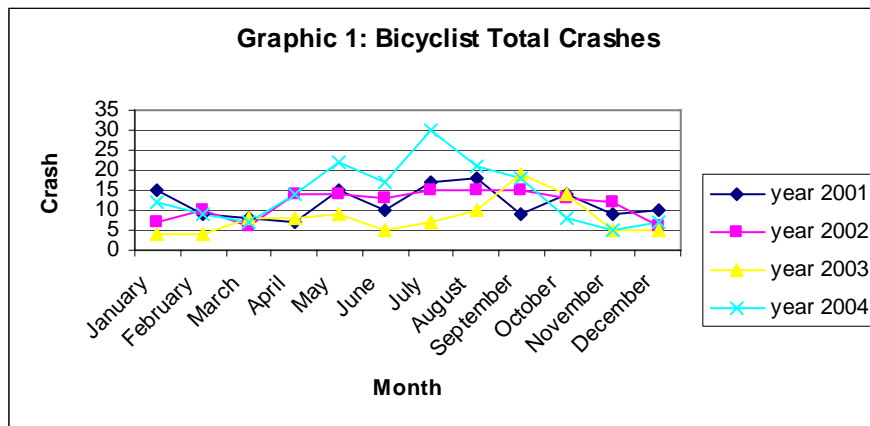


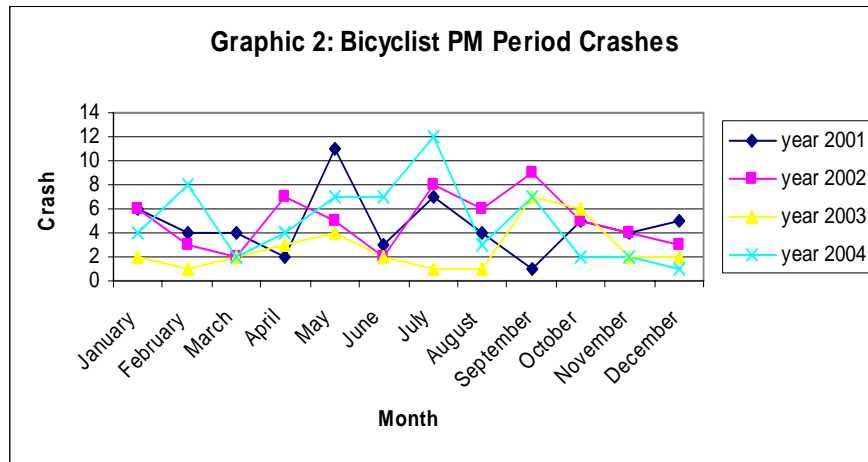
Safety

Safety is one of the most important considerations for travel and the transportation system performance. Safety need to be integrated into all phases of transportation planning, design, construction, maintenance, and operation.

Crash information is an important reference to assess transportation safety. Bicycle crash data can be studied by the frequency in which a crash occurs at any location by reviewing crash information over time. Another way is to look at the crash data in relation to the level of motorized activity at any location (crash rate). Table 2 shows information of the top ten locations in the Albuquerque Metropolitan Planning area by the number of bicycle crashes as well as by bicycle crash rates.

According to the Division of Government Research of the University of New Mexico crash database, approximately 549 bicycle crashes occurred during 2001 to 2004. August and July are the months in which bike crashes occurred with the most frequency during the study period (see graphic 1). On average, approximately 83.1% of the bike crashes included personal injury and about 38% of them occurred during the PM peak period which starts at 3:00 pm and goes until 7:00 pm (see graphic 2). Starting the pm peak period at 3:00 pm, guarantee the inclusion of the end of the school day.

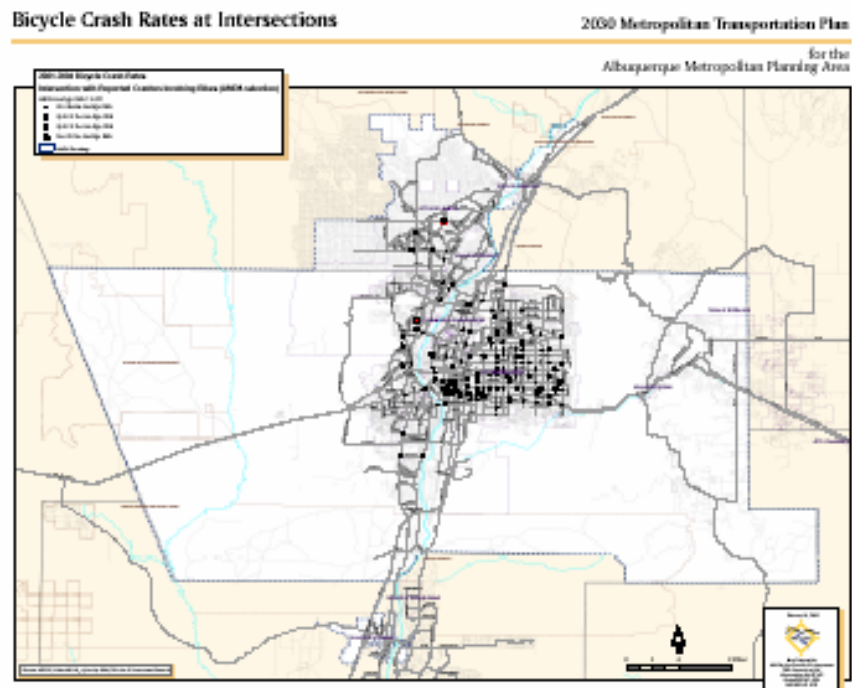




Bicycle crashes concentrate along Central Ave. but are clustered in areas when the analysis is based on crash rates. Map 2 shows crash rates at intersection for the metropolitan planning area. Areas with high crash rate are around UNM campus, downtown Albuquerque, and the area surrounding by Lomas Blvd., Indian School, Juan Tabo, and Tramway.

Table 2: Bike Crash Data for the AMPA 2001-2004			
Top 10 Location (rank by number of crashes)	Bike Crashes	Top 10 Location (rank by crash rate)	Bike Crash Rates
Lomas Blvd. - Morris	5	Reinken Ave. – Tenth St.	0.1418
Central Blvd. - Girard	4	Indian School – Constitution	0.1383
Central Blvd. – Louisiana Blvd.	4	Lomas Blvd. – Morris	0.1146
Central Blvd. – Yale	4	Candelaria – Rio Grande Blvd.	0.1108
Lomas Blvd. – Tennessee	4	Lomas Blvd. – Chelwood Park	0.0965
Central Blvd. – Carlisle	4	Homestead Circle – Taylor Ranch	0.0913
Central Blvd. – Stanford	4	Burlison Dr. – Louisiana Blvd.	0.0894
Central Blvd. – Juan Tabo	3	Gold Ave. – 3 rd St.	0.0739
Central Blvd. – Atrisco	3	Central Ave. – Yale Blvd.	0.0731
Central Blvd. – Broadway Blvd.	3	Gold Ave. – 5 th St.	0.0706

Map 2



Information about the cost associated with the proposed bikeway infrastructure will be provided in future updates of this document. A table listing all bikeway projects considered for the 2015 scenario and the 2030 scenario will be provided. Additional information and analysis will be added through the MTP development process.